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USSR Report

AGRICULTURE

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LIVESTOCK FEED PROCUREMENT

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EFFECTIVE UTILIZATION OF FEED RATIONS IN RSFSR OBLASTS DISCUSSED

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 1, Jan 84 pp 2-4

/Article by Yu. Gorbunov, chief of the Main Administration for Animal Husbandry of the RSFSR Ministry of Agriculture: "Use of Feed Having a High Return"/

/Text/ For this present wintering campaign the farms in the Russian Federation have procured a somewhat greater amount of feed than was the case last year. The volume of hay placed in storage was increased by 16 percent and haylage and silage -- 11 percent. At the present time, there are roughly 15.9 quintals of feed units available per standard head of cattle. This is 0.9 quintals more than was available in 1982. Nevertheless, the livestock requirements for high quality feed are not being satisfied completely.

It is hardly a mistake to say that the simplest method for overcoming these difficulties consists of supplying the animals with feed -- coarse, succulent and concentrated -- only in a prepared form.

Depending upon the local conditions and the degree of mechanization at the farms and complexes, the farms of Russia prepare their feed and feed mixtures in different ways. But regardless of which method is employed, one fact remains clear: in those areas where the preparation of forage for feeding to the animals is carried out in a serious manner, the wintering campaign is facilitated considerably, the state plans are fulfilled, an increase takes place in the number of cattle and their productivity improves.

At kolkhozes and sovkhozes in Orenburg Oblast, only 11.4 quintals of feed units were procured per standard head for the 1982-1983 wintering campaign -- 1 quintal less than the figure for the 1981-1982 wintering campaign. However, complaints are not being heard within the oblast concerning the poor crop and the personnel have not become reconciled to the failure. Instead they have undertaken urgent measures aimed at extricating themselves from this poor situation. At the present time, there are more than 900 feed preparation shops and feed kitchens in operation on cattle farms in Orenburg Oblast, where 2,257,000 tons of feed mistures are being prepared -- 10.5 kilograms daily per standard head. The oblast's livestock breeders are devoting special attention to the preparation of straw: of 1,516,000 tons intended to be used for feed purposes during the 1982-1983 livestock wintering campaign, 1,182,000 tons were fed in prepared form. The correct organization of feed preparation work on the farms has enabled the oblast's farms to increase considerably their production of meat and milk.

Last winter the farms in Belgorod Oblast made extensive use of feed in prepared form. Various types of treatment were employed for 400,000 tons of straw, or 62 percent of the amount available for feed purposes. This made it possible to raise noticeably the production of animal husbandry products. For example, milk production has been increased by 8 percent above the figure for last year.

At kolkhozes and sovkhozes in Rostov and Tomsk oblasts and in Krasnodar and the Maritime krays, where the preparation of feed has also been organized in a serious manner, 10-18 kilograms of feed mixtures daily were required per standard head of cattle during the past livestock wintering campaign. Delivering the feeds in the form of feed mixtures raises their effectiveness by 10-15 percent compared to their use on an individual basis.

How are the feed mixtures prepared?

Of considerable significance in this regard is a feed preparation shop with a productivity of 60 tons per shift that was developed by the Bureau for Plans and Estimates of the Department of Capital Construction of the Kanevskiy Rayon Executive Committee in Krasnodar Kray. The shop was created for the purpose of preparing mixtures from coarse, succulent and concentrated feeds and the various additives used with them. The technological equipment for such a feed preparation shop consists of a line for supplying silage and haylage, coarse and granulated feeds, macro and micro-additives, pulp residues and root crops. The latter are washed and minced on a special line. There are lines for preparing and supplying a mixture containing molasses and urea and for preparing and issuing swill based upon the use of concentrated feeds. The finished product is mixed, minced and issued for feeding purposes, also on a special line.

At the Pobeda Kolkhoz in Kanevskiy Rayon (more than 12,000 head of cattle, including 3,200 cows), a similar type of year-round feeding has been introduced into operations. Moreover, the feed is being placed in the feeding troughs only in prepared form. Towards this end a feed preparation shop has been established making it possible to mechanize completely all of the production processes. The shop is operated by only four individuals.

For a period of many years now, straw has played a major role in the ration structure for ruminant animals at farms and complexes. Each year millions of tons of it are fed to the livestock on farms in the RSFSR. Since the treatment with chemical agents raises the nutritional value of straw by 30-40 percent, one can readily appreciate how great a reserve this is for the farms. Methods for treating straw with soda ash, caustic soda, lime, ammonia liquor an anhydrous ammonia are being employed extensively in many zones throughout the republic.

Today everyone is familiar with the advantages to be realized from supplying the livestock with coarse feeds that have been treated with chemical agents. However, not everybody chooses to profit from these advantages. For example, let us take three farms in Kuybyshev Oblast -- the Kolkhoz imeni Kuybyshev in Kinelskiy Rayon, the Pravda Sovkhoz in Bol'sheglushitskiy Rayon and the Rodina Sovkhoz in Pestravskiy Rayon. The quantities of feeds and their structures were roughly the same at all three of these establishments. The

livestock strains were the same, as were also the milk production conditions. However the preparation of feed using chemical agents makes it possible for the Kolkhoz imeni Kuybyshev to have a higher cow productivity and to obtain more livestock products compared to sovkhozes where the feed is prepared using a "simplified technology." At the Kolkhoz imeni Kuybyshev, 1.2 feed units are consumed for the production of a quintal of milk. At the Rodina and Pravda sovkhozes -- 1.6 and 1.7. Roughly 8.5 feed units are expended at the first farm per kilogram of weight increase in the cattle and at the second and third farms -- 11.3 and 14.3 feed units respectively. The average annual consumption of feed per cow at the Kolkhoz imeni Kuybyshev is 10 percent lower than the figures for the Rodina and Pravda sovkhozes.

The easiest and simplest method consists of treating the straw with ammonia liquor. This operation is carried out most often directly in the stacks, which are covered with a polyurethane plastic, using a special syringe to inject the ammonia liquor. The injections are applied every 30-50 centimeters around the periphery of a stack at a height of 1 meter from the base. Each "injection should consist of not more than 30 liters of 25 percent ammonia liquor, with 120 kilograms being expended per ton of straw. After 5-6 days have elapsed the plastic is removed and the straw ventilated, after which it is minced and fed to the cattle.

Certainly, it is best if the treating of straw with ammonia liquor and anhydrous ammonis is carried out by special detachments of the Sel'khozkhimiya service.

The farms in Tula Oblast have accumulated a great amount of experience in the use of anhydrous ammonia. During the 1982-1983 wintering campaign, more than 4,000 tons of this reagent were used here, with 138,000 tons of straw being treated. In this manner 3 kilograms of hay were made available on a daily basis per standard head of cattle.

In those areas where there is a shortage of ammonia and the technical means needed for using it, use can be made of lime, soda ash and caustic soda. In this instance, use is made of 30 kilograms of unslaked lime, 10-15 kilograms of common salt and a similar quantity of carbamide per ton of cuttings. All of this is dissolved in 2 tons of water. The calcination is carried out in C-12 mixers or other containers. When treating coarse feeds with soda ash, the minced bulk is loaded into a steaming unit-mixer, sprinkled with a soda solution and steamed at a temperature of 80-90 degrees for one and a half hours. Roughly 40-50 kilograms of soda and 800-1000 liters of water are expended per ton of straw.

This method is employed by kolkhozes and sovkhozes in Orel, Ryazan, Kuybyshev and Ulyanovsk oblasts and in the Mari, Bashkir, Tatar and Udmurt autonomous republics.

Of definite interest is a method for treating straw using a 2-2.5 percent solution of caustic soda without the use of heat. During the course of such treatment not only is the link between cellulose and the incrustating substances disrupted, but in addition favorable conditions are created for the development of celluloselytic microflora, which participate actively in the digestion of cellulose.

Each additional feed unit obtained from the treatment of straw using lime costs 4.3 kopecks, soda ash -- 4.8, ammonia liquor -- 3 and caustic soda -- 5.8 kopecks.

In organizing rich feeding for livestock, a very important role is played by the preparation of complete ration granules and briquettes. The structure of the briquettes includes up to 40-50 percent straw, 20 percent grass cuttings or meal and 20-30 percent concentrated feed. Granulated feed used for the fattening of young cattle stock can consist of 60 percent straw, 10 percent grass cuttings and 25-30 percent grain particles with the addition of a mineral mixture.

The technology for preparing multiple-component granulated and briquetted feed mixtures makes it possible to lower feed losses, balance the rations completely and also to increase the edibility and digestibility of the straw. In addition, it makes it possible to utilize urea, fodder phosphates, vitamins, microelements and other feed additives in an efficient manner.

When supplying such feed to animals on a number of farms in Moscow and Tula oblasts, 0.94 quintals of feed units are expended for the production of a kilogram of milk and the weight increases for the cattle during fattening reach 800-900 grams. Feed consumption is reduced by 10-15 percent.

In recent years the method of fermentive hydrolysis of straw has gradually been introduced into operational practice. In addition to enriching the straw with the protein of yeasts, it raises the digestibility of the cellulose and protein sharply. According to data supplied by VNIIbiotekhnika /All-Union Scientific Research Institute of Biotechnics/, the content of crude protein in prepared feed increases to 12 percent, the digestibility of cellulose -- from 40-50 to 75-80 percent and protein -- from 9-14 in common straw to 80-85 percent in a feed mixture. The technology for the fermentive hydrolysis of straw has been introduced into operations on farms in Moscow (Kuybyshevo Sovkhoz in Istrinskiy Rayon), Sverdlovsk and other oblasts.

Under the conditions which prevail during the wintering campaign, deciduous-branch raw materials and coniferous needles can serve as a fine additional source for use in the principal ration. At kolkhozes and sovkhozes in Novgorod Oblast, they are prepared at the rate of one and a half kilograms per head daily, in Pskov Oblast -- 800 grams and in Kalinin Oblast -- 700 grams daily. A kilogram of coniferous-branch and deciduous-branch feed contains 0.3-0.4 quintals of feed units, 500-850 grams of dry substance and 50-120 milligrams of carotene.

Under the conditions of this present wintering campaign, the well known methods for improving the effectiveness of use of feed must not be neglected. In particular, this includes the preparation of silage pasta for swine, the yeasting and malting of concentrated feeds, the cultivation of chlorella and the growing of hydroponic greens in mineral salt solutions.

Now a few words concerning concentrates. Science and practical experience have proven that the greatest economic results are obtained at those times when they are fed to the animals in prepared form: in the structure of balanced mixed feeds or feed mixtures of concentrates and also in mixtures

with other feeds. Unbalanced concentrated feed is not very effective, its full value is considerably lower than that of mixed feed and this leads to an over-expenditure of grain forage. Moreover -- and this has been proven on more than one occasion -- an increase in the concentrate dosage in rations does not guarantee an automatic improvement in the productivity of the animals.

The most efficient method for preparing concentrated feeds for feeding to animals -- the production of mixed feeds and feed mixtures of concentrates at inter-farm and intra-farm mixed feed plants and shops. Unfortunately, many farm leaders do not attach proper importance to the advantages offered by this method. Its effectiveness is dependent upon full use being made of all of the feed resources available on the farms, including protein-vitamin and mineral additives obtained from the state's resources. Their efficient use will enable the farms to dose the animal rations correctly with grass meal, feed phosphates, urea, macro and micro-elements and also common salt. The digestibility of concentrated feeds can be improved considerably by malting, yeasting or brewing with hot water or steam.

In addition, the effectiveness of use of grain forage is strongly influenced by the degree to which it is ground up. The size of the particles must range from two tenths to one millimeter. According to data supplied by the Poltava Scientific Research Institute of Swine Raising, the nutrients in whole barley grain are digested by 67 percent, when pulverized in the form of coarse particles -- 79, medium -- 81.7 and small particles -- 84.6 percent. However, it is also known that the feeding of finely pulverized grain (less than 0.2 millimeters) adversely affects the acidity of gastric juice and pepsin activity, leads to disruptions in the function of the gastro-intestinal tract and is accompanied by ulcers in the stomachs of swine.

As is known, the edibility of feeds is greatly dependent upon their taste qualities. During the malting of concentrated feeds, the starch is partially converted into sugar and this improves the taste of the feed. On farms in the Buryat ASSR, more than 80 percent of the feed preparation shops and feed kitchens prepare "sweet" feeds which raise considerably the productivity of animal husbandry.

The feeding for animals cannot be of full value in the absence of mineral additives. However, microelements are in short supply in various zones throughout the republic. In order to raise the nutritional value of the rations, they should ideally be added to the animal rations in a mixture with concentrates, in a briquette structure, or they should be used to enrich mixed feeds and premixes.

A substantial reserve for strengthening the feed base is that of making use of food scraps. During the current five-year plan, 24,267,000 tons of such scraps must be collected throughout the Russian Federation as a whole. This is 145 percent more than was procured during the 10th Five-Year Plan. Last year, 3.1 million tons, or 66 percent of the annual task, were collected over a period of 9 months.

The feeding of food scraps was carried out in a fine manner in Moscow, Leningrad, Arkhangelsk and Kursk oblasts and in the Tatar and Chuvash ASSR's.

Very interesting experience was accumulated in this regard at the Znamya Oktyabrya Sovkhoz in Podolskiy Rayon, Moscow Oblast.

Active work is also being carried out in Leningrad Oblast in connection with the gathering up of food scraps. During 1983, 425,000 tons of such scraps were collected here. In a conversion for feed value, this amount was equivalent to 102,000 tons of forage grain. The sovkhozes obtained 26,300 tons of swine meat from the feeding of these scraps (at the rate of 6 feed units per kilogram of weight increase). During 1983, 81.6 kilograms were obtained per resident of Leningrad.

In recent years, a number of cities throughout the country have been searching for more effective means for utilizing food scraps. For example, a shop for the drying and granulation of scraps has been built at the Prigorodnyy Sovkhoz in Kursk. During a day's time, with double shift operations, the shop processes 40-50 tons of damp food scraps into 10-15 tons of dry high calorie feed, which can be stored for a period of 2 years without nutrient losses. In the future, food scraps should be dried out and fed to the animals in the structure of feed mixtures. The task of all agricultural organs, jointly with the municipal services, consists of participating more actively in the collection and utilization of this valuable feed.

All workers concerned with the preparation of feed must follow one particular rule: each kilogram of forage can be fed to the animals only in prepared form. And this requires continuous operations by the feed preparation shops and other feed preparation subunits.

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EFFICIENT UTILIZATION, QUALITY CONTROL OF FEED EXAMINED

Moscow ZHIVOTNOVODSTVO in Russian No 11, Nov 83 pp 2-6

[Article by K. M. Solntsev, academician of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin]: "Effectively Utilizing Feed"]

[Text] In working intensively to fulfill the Food Program the country's livestock farmers achieved a significant increase in meat and milk production this year. During the coming winter conditions these achievements will have to be secured.

The success of work during the stall-upkeep period of livestock depends greatly on the full-value feeding of animals. The complete and efficient utilization of feeds must be at the center of attention of the collectives of all livestock farms.

This year a noticeable step forward has been taken in feed production. In many enterprises there will be enough coarse and succulent feed to fully meet the needs of livestock farming during the overwintering period and to create significant transitional reserves. The enterprises of Lithuania, Latvia, Estonia and Belorussia have procured much more hay and haylage this year than last.

The quality of feeds produced has improved considerably. The proportion of low-quality hay (third class and non-categorized feed) decreased from 40 percent in 1982 to 26 percent; of haylage--from 50 to 30 percent; and of silage--from 40 to 20 percent. All of this enables us to economize on the use of concentrates when feeding cattle and sheep during the winter period and to allocate more for hog and poultry-raising.

In each enterprise there should be a determination of a complex of measures which will enable us to yield the greatest return on feed and to increase the production of meat, milk and wool. It is essential to establish constant controls over the storage of feed and to efficiently eliminate factors that might decrease its quality; to develop a schedule for analyzing the quality of hay, haylage, silage and grass meal in individual feed-storage facilities for the entire stall-upkeep period so that the last analysis occurs no later than 10 days prior to the beginning of utilization of the feed;

to foresee a drop in the share of concentrates in the rations of cattle and sheep and an increase in coarse and succulent feeds when distributing feed resources among farms; to implement the program of the indicated methods of preparing feed without interruption and to correctly determine the productivity of technical lines in every feed shop; to foresee the timely replenishment of reserves of the necessary feed supplements and chemical means for processing straw; and to improve the quality of mixed fodder in local production.

As scientific studies have shown, active biochemical changes often occur in feed that is put into storage and as a result there is a decrease in it of sugar, carotene and protein content and consequently of nutritive value. This is why repeat analyses of feed prior to feeding are necessary. At the present time, when there are about 8,500 feed laboratories operating in the country, making such analyses should not cause a problem.

In controlling feed storage it is possible to discover hay that has a high moisture content. In order to avoid spoilage it is recommended that hay be stacked or treated with liquid ammonia, which is applied with the aid of "needles" from metallic pipes (with openings) having a diameter of up to 3 centimeters and a length of 3-3.5 meters. For 1 ton of hay 5-10 kilograms of ammonia are used for a one-time application. In the Put' k Kommunizmu Sovkhoz of Khimkinskiy Rayon, Moscow Oblast, over 3,000 tons of hay with a moisture content of 25-46 percent were treated with ammonia during the past 2 years with good results.

As we know, in many enterprises farmers try to compensate for the shortage and poor quality of coarse and succulent feed by increasing the ration of concentrates. Unfortunately, some scientific recommendations about so-called new types of feeding (concentrated, semi-concentrated, haylage-concentrated, silage-concentrated and others) facilitated the spread of the abundant-concentrate type of feeding of livestock. However, their use was not effective with regard to growth in productivity and resulted in the overconsumption of concentrates. For example, the expenditure of concentrates per 1 kilogram of milk reached 510 kilograms in Tambov Oblast, 520 in Kuybyshev, 560 in Irkutsk, 650 in Tomsk oblasts and 670 grams in Tuva ASSR. The level of concentrated feeds has doubled in the rations of cows during the last 15 years in the country as a whole. Industrial complexes producing beef utilize an average of 3.9 kilograms of concentrated feeds per 1 kilogram of weight gain.

It is fully apparent that we cannot continue to maintain the unjustifiably high level of concentrates in rations. Livestock farmers are faced with a problem of great zootechnological and economic significance--to change the feeding structure of the dairy and beef herds everywhere.

It is important to note that in many enterprises farmers were able to change the structure of rations, to decrease the expenditure of concentrates and to increase the dairy and beef productivity of animals during the stall-upkeep period of 1982/83 and then during the pasture season. In this regard there has been a positive experience in the sovkhozes of Vologda Oblast, as described in detail on the pages of the September 1983 issue of this journal.

It is essential to develop the process of changing the structure of feed rations on every farm during the current overwintering period and in the future, keeping in mind the peculiarities of the zonal system of feed production that has been developed during the last few years.

As we know, the standardized feeding of animals is the most important condition for the efficient utilization of feed resources. In developing a feed balance it is essential to take not the table but the actual nutritive state of the animals in accordance with quality class. One kilogram of first class hay contains 0.47 feed units, second class--0.42 feed units, third class--0.36 feed units and not classified--0.28 feed units; it contains 42.5, 37.8, 32.7 and 25.5 grams of digestible protein respectively. One kilogram of first class haylage contains 0.32, second class--0.29, third class--0.25 and not classified--0.20 feed units; digestible protein content--34, 30.9, 26.5 and 21.4 grams respectively. The nutritive value of first class silage is 0.18, second class--0.16, third class--0.13 and not classified--0.09 feed units; the content of digestible protein in 1 kilogram is 15, 13.4, 10.8 and 7.5 grams respectively.

The proper balance of rations with regard to basic nutrients signifies assurance regarding reaching the planned level of productivity in animals while saving on the expenditure of concentrated feeds. Departures from this requirement lead unavoidably to a drop in dairy and beef productivity.

At the same time many specialists working on large farms sometimes experience difficulties in organizing the standardized feeding of animals, especially of dairy cows. In actual fact, on farms where 800-1,000 or more cows are concentrated and where the mechanized distribution of feed is utilized the organization of standardized group feeding utilizing the method of dividing the herd into groups according to productivity gives rise to considerable difficulties.

During the creative search for ways to eliminate these difficulties a system of flow-shop organization was developed for the production of milk; it foresees equipping each shop with animals with a consideration of their level of productivity and physiological condition, that is, of the basic criteria for organizing standardized feeding. The flow-shop system has undergone production testing in all zones of the country. Especially good results in introducing this system have been achieved in Lvov, Moscow, Saratov, Leningrad and Ivano-Frankovsk oblasts.

There are, unfortunately, examples in which the absence of sufficient knowledge on the technology of the flow-shop system and a lack of adherance to necessary conditions has not allowed enterprises to achieve positive results from its use.

We must strengthen controls over the organization of full-value feeding of livestock on small farms, reintroduce methods of individual, group and mass milking of cows which have justified themselves in the past, strengthen the directed raising of calves, carry out the intensive fattening of cattle and hogs and differentiate feeding according to periods.

We cannot forget about providing livestock raising with mineral feeds. This problem is constantly urgent. Even abundant feeding with qualitatively-good coarse and succulent feeds should not decrease attention toward replenishing rations with mineral feed supplements. There should be constant controls over providing animals with cooking salt, feed phosphates, feed chalk and the salts of trace elements.

In the Estonian SSR the supplying of mineral fertilizer to farms is well-organized. In the Vyayke-Maar'ya Kolkhoz of Rakvereskiy Rayon the republic's agricultural ministry organized the production of combined mineral supplements for all of the enterprises in Estonia. In this kolkhoz the average productivity of cows has exceeded 5,000 kilograms of milk for several years now. There has been some positive experience in organizing local production of mineral-salt briquettes in the Ukraine, Belorussia and Bashkiriya.

For many RAPO's [Rayon agro-industrial associations] the organization of production of mineral supplements with the partial utilization of local raw materials and the supply of these supplements to livestock farming is a realistic goal. Its fulfillment will facilitate the growth of dairy and beef productivity.

Organizing the structure of feed rations of animals by increasing the proportion of coarse and succulent feeds in them and by lowering the level of concentrates is related not only to the problem of improving the quality of hay, haylage and silage but also to the necessity of decreasing, because of this, the content of phosphorus, one of the most important elements of mineral nutrition for animals, in rations. In 1 kilogram of good-quality hay there is 30 percent less phosphorus than in the grain of forage crops; in 1 kilogram of straw and haylage--70-75 percent less; in silage--80 percent less; and in root crops--90 percent less. Consequently, in order to avoid a decrease in phosphorus salts in the rations of cattle and sheep they must be enriched in the necessary amount of feed phosphates. For example, in order to produce from cows a daily milk yield of 12 kilograms a ration of 6 kilograms of coarse feed, 30 kilograms of silage, 5 kilograms of feed beets and 1.5 kilograms of concentrates must be supplemented with another 70 grams of defluorinated phosphate; in order to achieve no fewer than 800 grams of weight gain in beef calves at the age of 1 year a ration of 3 kilograms of coarse feed, 17 kilograms of silage and 0.8 kilograms of concentrates requires a supplement of 30-32 grams of phosphate.

Unfortunately, the chemical industry is in constant debt to livestock farmers as regards supplying farms with mineral salts. For example, the livestock farms of the RSFSR this year have been supplied with only 88 percent of the needed table salt and 23 percent of the needed feed phosphates. The shortage of each ton of table salt results in the underproduction, as a minimum, of 12-15 tons of milk or 6-7 tons of meat (live weight).

Special attention should be given to balancing rations with regard to protein. An important measure in solving this problem is the resolution of the USSR Council of Ministers on measures to increase the production of protein and other feed supplements for livestock farming. Naturally this does not mean that other sources of feed protein in the country's forage balance should

not continue to grow. The main focus will be on increasing the production of vegetable protein by means of legumes and pulse crops.

The problem of protein is being successfully solved by means of increasing the production of pulse crops in the Kolkhoz imeni 17 Parts"yezd of Goretskiy Rayon, Mogilev Oblast. Here the cultivation of feed lupine for grain is well developed. This enabled farmers to avoid a shortage of protein in the rations of cows and to increase its level to an average of 105 grams per feed unit. The average yield per cow (in a herd of 840 head) reached 3,460 kilograms of milk in 1982.

Under the conditions of the winter season supplementary replenishment of animals' rations with feed protein is limited. For this reason each farm must take effective measures to efficiently utilize the protein potential of feeds. In this regard controls over observing the storage regimen for coarse and succulent feeds are very important. For example, violations of air-tight conditions for haylage and silage masses results in a significant rise in feed temperature and as a consequence amino acids and sugars form a non-digestible complex (melanoids).

It has been established that if the digestibility of raw protein in grass silage is equal to 71 percent at a regular temperature (up to 40 degrees C) and to 75 percent in haylage, with an increase in temperature in the storage facility up to 50 degrees the digestibility of the former drops to 58 percent and of the latter to 60 percent; at a temperature of 60 degrees--to 40 and 33 percent; and at a temperature of 70 degrees--to 8 and 8 percent. Simultaneously there is a decrease in the digestibility of fat, gluten and BEV [Nitrogen-free extractive]. The general nutritive value of 1 kilogram of silage decreases from 0.22 to 0.03 feed units; of haylage--from 0.38 to 0.06 feed units. Thus a deterioration in the quality of feed can sharply alter preliminary calculations concerning supplies of digestible protein and energy for animals.

Securing the proper sugar-protein ratio (1:1) is also an important condition for the efficient utilization of feed protein by cattle. Scientific studies have shown that the digestion process, the ingestion and assimilation of protein (synthesis of the protein molecule) yields optimal results only if the quantity of protein entering into the body of an animal equals that of sugar entering the body.

The sugar deficit should be corrected by means of molasses syrup. If none is available straw that has been subjected to hydrothermal processing should be utilized, since this type of straw has a sugar content that increases to 10-12 percent.

In order to supplement protein shortages in the rations of ruminants there should be an extensive use of synthetic nitrogen substances (SAV). We can present many examples from practical experience and cite a large number of reproachless scientific experiments which consistently confirm the high degree of effectiveness of utilizing SAV's and the possibility to significantly economize on deficit protein feeds (oilcakes, oil-seed meal)

as a result of this. According to data from the Ukrainian NII [Scientific-Research Institute] of the Physiology and Biochemistry of Livestock, the use of 2,000 tons of carbamide concentrates in Drogobychskiy Rayon, Lvov Oblast, yielded a savings of 10,000 tons of concentrated feeds worth 1 million rubles. In the kolkhozes and sovkhozes of Mary ASSR supplementary meat and dairy production worth an average of 3 million rubles resulted from the use of carbamide in the rations of cattle and sheep.

There is no doubt about the advantage of replacing 20-30 percent of feed protein with SAV's but there are many enterprises which maintain their dairy and beef cattle for months on rations that are short on proteins, overexpending feed for production and underproducing it and not utilizing SAV's in winter rations.

One of the most effective methods for feeding SAV's is utilizing them in the form of carbamide concentrates, which are mixtures of carbamide and gelatinized starch, which secures a slower speed of carbamide breakdown in the gizzards. The concentrate does not require a long acclimatization period from animals and is characterized by a high level of assimilation of nitrogen.

There is more and more extensive utilization of the achievements of microbiology in the production of protein by means of cultivating yeast cells. The scientifically-based technology, which has as its foundation the hydrolysis of starch and gluten in feed as the nutritional media for the rapid growth of yeast biomass, is accessible to all modern feed shops.

The production experience of the past winter in the enterprises of Leningrad, Chernovitsy, Grodno, Pavlodar and Belgorod oblasts and the Chuvash and Tatar ASSR's provides us with a convincing example of the high degree of effectiveness of yeast set-ups. Over 1,700 of these were in operation last winter in the kolkhozes and sovkhozes of the Tatar ASSR; their coordinated work in a complex with other measures secured the successful fulfillment of socialist obligations on the sale of milk and meat to the state. In the enterprises of Estonia the feeding of concentrated feeds in yeast form is utilized for cows, the daily milk yield of which comprises 15-20 kilograms.

Modern feed science has developed many effective technologies for preparing feeds for feeding; their use secures a significant rise in the energy and biological value of feeds and facilitates a more immediate effect on the growth of productivity of animals and on a drop in feed expenditure per unit of production. This is why the basic criteria for evaluating the feed shop should be not the number of tons of feed that move through the shop but the effectiveness of the feed with regard to increasing production output on farms and decreasing costs, i.e. evaluating the work of feed shops by the final results.

In connection with the large proportion of straw in the rations of ruminants it is essential to give special attention to the technology for processing it. We cannot be satisfied simply with crushing and steaming. It is essential to extensively introduce chemical treatment methods in order to actively

affect the lignin-cellulose complex of straw, that is, to create the conditions for a more complete digestion of nutrients and for increasing the nutritive value of straw by a factor of 2-3. Caustic or calcined soda, reduced ammonia and ammonia water and lime can be utilized for chemical treatment. Evidently the time has come to set the goal of not feeding straw to animals without first subjecting it to chemical treatment. The treated straw should be granulated with the OGM-8 or the OGM-1.5 with the simultaneous introduction of grass cuttings, concentrates, carbamide and mineral supplements into the composition of the granules.

It is desireable to include the preparation of feed mixtures in the technological operations program of feed shops. Scientific studies have shown that the same law of mutial interaction of feeds operates here as utilized in the development of recipes for mixed fodder. The nutritive value of a properly composed feed mixture is 15-20 percent greater than the sum total of the nutritive values of all the feeds mixed. In the opinion of specialists, the most productive machines for the preparation of loose feed mixtures are the KORK-15 and the Kompleks. In developing recipes for feed mixtures we should follow the recommendations confirmed by the agricultural ministries of republics and by regional divisions of VASKhNIL.

We must firmly adhere to the principle that feed of lower quality requires significantly more technical processing.Good quality hay and silage require no treatment. It is desireable to feed animals coarse feeds that have been chemically treated in feed mixtures. This has a positive effect on the desire of animals to eat the feed and it improves the physiologic condition and productivity of the animals as well. There has been an interesting experience in the use of moist feed mixtures in the Zavety Il'icha Kolkhoz, Domodedovskiy Rayon, Moscow Oblast. Here a warm liquid feed mixture of the following composition is used: 250 kilograms of grain wastes, 300 of potatoes, 100 of grass meal, 10 of table salt and 300 doses of a microelements mixture per 3 tons of water. This mixture is added to chemically-treated coarse feeds, which increases their palatability and nutritive value.

We must also turn our attention to the preparation of grain feed. If an enterprise must feed grain in a pure form and not as part of mixed fodder, it is very important to make it as full-value as possible. First of all, it is necessary to properly determine the size of the crushed grain. Cattle digests medium-sized and large flattened pieces of grain best; finely cut grain is better for hogs. Positive results have been achieved by the processing of grains of cereals and cereal grasses using extruder units, especially for piglets. The next stage in the preparation of grain feeds is their careful mixing, the addition of grass meal and enrichment with macro- and microelements, carbamide and vitaminous preparations. Feed antibiotics are also added to feed mixtures for feeding to calves and piglets.

It is intolerable to allow the feeding of excessively acidic silage to animals, which will not eat it successfully. This type of feed can be treated with ammonia water or mixed with finely-chopped beets.

The process of intensifying the branch of livestock raising is impossible without the development of production of mixed fodder. With a consideration of this extensive measures have been determined to quickly increase the capacities of the mixed-fodder industry. In order to accelerate production growth we should organize inter-enterprise mixed fodder enterprises more extensively. During the last three five-year plans the output of mixed fodder increased by a factor of 4.6. Nevertheless, there is still a shortage of mixed fodder and about 60 million tons of concentrates are fed in the form of simple grain mixtures. Especially small amounts of grain are processed into mixed fodder in the enterprises of the Kazakh SSR, the Belorussian SSR, Saratov and Volgograd oblasts and Krasnoyarsk Kray. At the same time an acceleration in the pace of producing mixed fodder resulted in the lagging behind of some branches of the processing industry which supply protein feeds and feed supplements. In connection with this there was a noticeable drop in the quality of mixed fodder and its full value status, which is having a negative effect on the productivity of animals and results in the overconsumption of feed and in increased production costs.

The past orientation of mixed-fodder plants toward obtaining protein raw materials in the form of oil-seed meal and fish and meat-bone meal could not yield the necessary results in view of the limited nature of these resources. In order to maintain the necessary level of protein in mixed fodder the main and most realistic direction must be the utilization of grain from pulse crops--peas, lupine, lentils, feed beans, soybeans and chick peas.

The livestock farms of enterprises can make a considerable contribution toward replenishing the protein raw materials resources of inter-enterprise mixed-fodder plants. There should be increased production of meat-bone meal from local raw materials and specially-processed dry bird droppings should be introduced into the composition of mixed fodder under the control of veterinary specialists.

It is difficult to come to terms with such lengthy and serious lags in the development of the industry that supplies mixed-fodder plants with preparations of vitamins, macro- and micro-elements, amino acids, feed antibiotics, anti-oxidates and other biologically-active substances. The fulfillment of the Food Program is a national task; in order to successfully implement its plans the industry involved in the production of the entire complex of feed supplements necessary to livestock raising must work with great intensity.

8228
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LIVESTOCK

ESTONIAN 1983 LIVESTOCK SECTOR PERFORMANCE REVIEWED

Tallinn SOVETSKAYA ESTONIYA in Russian 22 Jan 84 pp 1,3

/Article: "It Was a Successful Year"/

/Excerpts/ The agricultural workers in our republic are quite correct in conisdering the past year to have been a successful one. A fine harvest of grain, grasses and other crops was obtained from the fields. The output of the farms increased. The state tasks for procurements of grain, potatoes, vegetables, flax, meat, milk and eggs were fulfilled ahead of schedule. Compared to 1982, the gross agricultural output increased by 97 million rubles or by 9.1 percent. These results were achieved owing to the selfless labor performed by the peasants and their many assistants.

Meat production (in live weight) at the kolkhozes and sovkhozes increased by 18 percent during the year, milk -- by 9 and eggs -- by 2 percent. The plan for the sale of livestock and poultry to the state was overfulfilled by 2 percent, milk -- by 7 and eggs -- by 5 percent. All of the rayons fulfilled their planned tasks for selling animal husbandry products to the state and also their socialist obligations.

Considerable increases took place last year in the numbers of livestock and in the production of animal husbandry products on the private plots. Compared to 1982 when the population sold 18,400 tons of livestock directly to the state or on the basis of agreements concluded with the farms, in 1983 -- 79 percent more. Milk procurement from the population increased by 6 percent.

During the year the productivity of the cows at kolkhozes and sovkhozes increased an average of 317 kilograms, thus making it possible to obtain a record milk yield per cow during 1983 -- 3,701 kilograms. Milk production was organized well on farms in Raplaskiy, Kharyuskiy and Khaapsaluskiy rayons, where the productivities of the cows increased during the year by 506, 439 and 360 kilograms respectively. Deserving of special mention is the work carried out in this oblast on farms in Paydeskiy and Rakvereskiy rayons, where the average milk yields for the rayons exceeded 4,000 kilograms of milk per cow. This was the first time for this amount to be achieved in Rakverskiy Rayon.

The highest productivity (an average of 6,105 kilograms of milk per cow) was achieved at the Rakvere Station for the Artificial Insemination of Agricultural Animals. Five farms obtained more than 5,000 kilograms of milk per cow.

Unfortunately, seven of the republic's kolkhozes and sovkhozes (the sovkhozes Takhe, Kaag'yarve, Karula and Otelya in Valgaskiy Rayon, the Kakhala Sovkhoz in Kharyuskiy Rayon and the kolkhozes Must'yala and Kyarla in Kingiseppskiy Rayon) achieved average productivities for their cows which were less than 3,000 kilograms.

It is gratifying to note that last year all of the kolkhozes and sovkhozes fulfilled their procurement plans for animal husbandry products with the exception of the Yyzu Sovkhoz in Vilyandiskiy Rayon, which did not fulfill its plan for selling either milk or meat to the state. Compared to 1982 when the average daily weight increase in young stock and in cattle on fattening regimes was 501 grams, last year -- 528 grams (and in Rakvereskiy Rayon even 574 and in Paydeskiy Rayon -- 564 grams). Swine undergoing fattening regimes added 412 grams daily in 1982 and last year -- 465 grams (in Vilyandiskiy Rayon -- 510 and in Pyarnuskiy Rayon -- 508 grams). But the reserves available for raising the efficiency of fattening operations have by no means been exhausted.

The average sales weight for both cattle and swine is increasing with each passing year. Last year the meat combines were supplied with cattle weighing an average of 430 kilograms (in 1982 -- 404 kilograms), with animals being delivered to the combines from Rakvereskiy and Paydeskiy rayons weighing 457 and 455 kilograms respectively. At the same time, this indicator for Kingiseppskiy Rayon was only 408 and for Tartuskiy Rayon -- 418 kilograms.

Such great differences were not observed in the sales weights for swine and quite often these differences were dependent upon the readiness of the meat combines to accept the animals. In 1982 the average weight of the swine delivered was 93 kilograms and last year -- 106 kilograms. However, improvements are clearly needed in the fattening of swine on farms in Kharyuskiy and Kingiseppskiy rayons, where the animals are being sold at weights less than 100 kilograms.

Unfortunately, dozens of expensive cows are falling into the hands of temporary milkmaids. The leaders, specialists and party organizations of farms must devote daily attention to disseminating leading experience, strengthening the cadres of livestock breeders and improving their skills. The komsomol organizations must send more youth, especially young members of the Komsomol, to the farms.

The impression has developed that many kolkhozes and sovkhozes are blaming all of their shortcomings in organizing production operations on the weather conditions. First there is too much precipitation and then later the blame is placed upon the sun. Truly, the weather exerts an effect on the weather and will continue to do so in the future. But at the present time the caprices of nature must be countered by raised discipline and a greater sense of responsibility for ensuring that all plans and obligations undertaken are fulfilled. This is precisely the requirement which was assigned to the agricultural workers in the decisions handed down during the December (1983) Plenum of the CPSU Central Committee.

The tasks for this current year are considerably higher than those for last year. This means that commencing with the very first weeks of the year each

Meat Purchases and Average Daily Weight Increases in Livestock During Fattening (during January - December 1983)

Rayons	Livestock and poultry purchased at all categories of farms -- in % of		Average weight of livestock purchased -- in kilograms		Average daily weight increase in livestock during fattening at kolkhozes and sovkhozes -- in grams	
	Plan	Corresponding period for 1982	Cattle	Swine	Cattle	Swine
Valgaskiy	106	125	415	106	611	426
Kharyuskiy	104	115	441	99	613	457
Pylvaskiy	103	113	427	106	648	440
Khiyymaaskiy	103	104	427	107	628	494
Tartuskiy	102	121	418	109	522	434
Raplaskiy	102	120	436	102	672	458
Paydeskiy	102	131	455	107	637	493
Vyruskiy	102	122	416	115	602	451
Yygevaskiy	102	120	427	107	596	455
Kokhtla-Yarveskiy	101	117	419	106	593	454
Khaapsaluskiy	101	119	421	101	600	464
Kingiseppskiy	101	105	408	98	632	474
Pyarnuskiy	100.8	112	427	103	645	508
Vilyandiskiy	100.8	118	427	111	691	510
Rakvereskiy	100.5	123	457	107	647	451

farm must carry out its work in a well organized manner. Indeed, it is precisely during January and February, for example, that the decision is made as to how many swine are to be sold during the year by a farm or rayon.

A further increase in the production of animal husbandry products is directly dependent upon the manner in which reproduction of the herd is organized. A certain amount of progress was achieved in this regard in 1983. Compared to 1 year ago, an increase of 0.5 percent took place in the number of piglets obtained from 100 principal sows and in the case of cows and heifers over 2 years of age -- 2 percent more calves. Compared to early 1983, on 1 January there were 4 percent more swine at the kolkhozes and sovkhozes and 2 percent more cattle. However, the extensive nature of barrenness among the cows is arousing considerable concern. Last year 81 calves were obtained per 100 cows, or one less calf than during 1982. Compared to a majority of the farms in Khaapsaluskiy and Vilyandiskiy rayons where 87-85 calves were obtained per 100 cows, on many farms in Pylvaskiy, Rakvereskiy, Tartuskiy and Valgaskiy rayons -- less than 80.

The shortcomings noted in herd reproduction operations are explained for the most part by problems in the raising of young stock. In recent years, a

Milk Purchases and Cow Productivity
(during January - December 1983)

Rayons	Milk purchased at all categories of farms -- in % of Plan	Corresponding period for 1982	Average milk yield per cow at kolkhozes and sovkhozes -- kg	+ kg compared to corresponding period for 1982
Khaapsaluskiy	115	116	3432	+360
Pyarnuskiy	111	111	3879	+292
Kingiseppskiy	110	111	3296	+237
Rakvereskiy	109	113	4048	+333
Kharyuskiy	109	117	3677	+439
Raplaskiy	108	121	3723	+506
Paydeskiy	108	117	4056	+421
Khiyumaaskiy	107	111	3344	+262
Yygevaskiy	106	111	3731	+279
Valgaskiy	106	107	3199	+208
Vilyandiskiy	105	112	3802	+357
Vyruskiy	105	108	3539	+190
Pylvaskiy	105	104	3645	+ 88
Tartuskiy	104	110	3518	+237
Kokhtla-Yarveskiy	103	110	3538	+282

certain amount of work has been carried out in connection with eliminating these problems and yet sufficient attention is still not being given to improving the feeding situation or the technology for the maintenance of young stock. A majority of the large farms lack facilities for calving and for their calves. Owing to the absence of modern calfhouses, more than 60 percent of the young animals are being maintained in old converted facilities. Thus considerably more attention must be given to those problems concerned with the maintenance of young stock.

It is a well known truth that good calves are not obtained from low productivity cows. During the next few years, we must obtain milk yields on the order of 3,900-4,000 kilograms per cow. This requires that the heifers, at the moment that they are inseminated, that is, at the age of 16-17 months, weigh 340-350 kilograms.

It is gratifying to note that the animal losses declined somewhat in 1983 -- by 3 percent for both cattle and swine. Nevertheless, some farms are still losing many tens of thousands of rubles annually because of this factor. Improvements must be carried out in the zootechnical system employed on the farms and in veterinary services and the livestock breeders must display greater responsibility for the safeguarding of their animals.

Last year the agricultural workers succeeded in carrying out their seasonal work on a timely basis owing to the assistance provided by thousands of city-dwellers, students and pupils. The Food Program is a matter of national concern. Fine work was performed by the collectives of enterprises of the ESSR Ministry of Procurements. The farms were continuously supplied with mixed feeds and protein-vitamin additives. The production plan for concentrated feeds was fulfilled in 1983 by 103.3 percent.

The rural builders fulfilled their plan for construction-installation work by 102.2 percent, with the plan for placing all types of installations in operation being fulfilled, with the exception of repair workshops. The plan for placing housing units in operation was exceeded by 6.5 percent.

The land reclamation specialists coped with their tasks. They over-fulfilled their annual plan for the drainage of land by 12 percent and placed 17,900 hectares of reclaimed land at the disposal of the farmers. The annual task for soil improvement work was exceeded by 7.5 percent. Other departments and enterprises of the agroindustrial complex also fulfilled their planned tasks. The tasks for 1984 are presently being defined more specifically on the farms, a majority of the kolkhozes and sovkhozes have undertaken tense obligations and work has commenced aimed at carrying them out. The center of gravity for this work has shifted to the farms. During the winter period, the livestock breeders must make full use of all possible reserves for increasing the production of milk and meat. The first three winter months were successful. Yes and during the first 10 days in January the daily milk yield per cow was higher by 0.1 kilogram than the figure for 1 year ago. The success thus achieved must be reinforced and further developed.

In the workshops, the machines are being placed in proper working order. The repair work is still being carried out for the most part according to the schedule. The goal -- to complete the repair work on tractors and sowing implements no later than 15 March, to place all feed procurement equipment in proper working order by 15 May and all grain harvesting combines -- by 1 July.

By 1 January, the plan for placing grain crop seed in storage had been fulfilled by 130.2 percent, including 114.6 percent for 1st and 2d class seed. Potato seed is also on hand. In view of this present capricious winter, a need exists for checking upon the condition of the potatoes in clamps almost on a daily basis. The applications of organic materials and other operations upon which the future harvest is dependent must be carried out on a more intensive basis.

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ESTONIAN LIVESTOCK OVERVIEW

Milk Yield, Meat Procurement

Tallinn SOVETSKAYA ESTONIYA in Russian 16 Nov 83 pp 1, 3

[Article in the column "Agricultural Commentary": "Generating Success"]

[Text] For livestock raisers October was a month of transition from outdoor to indoor maintenance of herds. By the first day of October all farms had drawn up plans for winter feeding, in which, along with the quantities and quality of feeds, a determination was made of the size of the wintering herd as well.

Stockmen in our republic coped with the tasks of the transition period quite well. The October yield from milk cows averaged 264 kilograms, that is, on a level with last year. On farms of the Raplaskiy, Kokhtla-Yarveskiy, Paydeskiy, Rakvereskiy, Khar'yurskiy and Yygevaskiy rayons, milk yields were even greater than the year before. There is no doubt of the fact that the current year's milk yield will exceed that of last year. By November first, 3189 kilograms of milk had been obtained from dairy cows. The increase in yield compared with 1982 totaled 302 kilograms per cow. The highest yield levels were found in the Paydeskiy and Rakvereskiy rayons, with 3481 and 3470 kilograms respectively, surpassing the previous year's yield per cow by 410 and 322 kilograms respectively. The reduction in the milk production and procurement volumes in October on some farms was due primarily to insufficient transitional feeds and inadequacies in feeding and planning for livestock maintenance.

It is heartening that for the last ten days of October and the first ten days of November, the majority of farms reported greater dairy herd productivity than for the same period of the previous year. Right now every effort must be expended to insure that the yield level does not decline for even a single farm, as well as to attain optimal growth. On the first of November, percentages of hay, haylage, and feed straw were respectively 16, 25, and 9 higher than on November first of the preceding year, while in terms of feed units per head of cattle, the percentage of feeds amounts to 9 points higher than last year. Consequently, all of the preconditions for an increase in dairy productivity are firmly in place.

Of course, the feed situation is not the same everywhere. On many of the farms of the Pylvaskiy, Tartuskiy, Valgaskiy and other rayons, feed reserves are even

lower than a year ago. What is needed is a careful weighing and probing of the possibility of redistributing reserves within rayons. Without question, a certain amount of redistribution is also possible between rayons.

The preparation of feeds pays for itself in every conceivable way, especially so--straw made suitable for use as feed by chemical or thermal processing. And it is already necessary right now to begin with this approach. Along the same lines, there is absolutely no reason to disdain the use of rameal feed to satisfy the vitamin requirements of the herd. Even after allowing for the fact that the quality of stored feeds is presently higher than it was a year ago.

As of November first, state procurement of cattle and poultry, milk, and eggs from all categories of farms was respectively 25, 13, and 2 percent higher than for the same 10 months of 1982. After 10 months, annual requirements with respect to sales of cattle, milk, and eggs were respectively 86, 93, and 87 percent fulfilled. There is evidently a basis for believing that all rayons are currently coping with governmental objectives with regard to sales of livestock products. During the weeks remaining before the end of the year, a serious effort should be made to ensure that each and every farm is ably managing with its plans. The prerequisites and capacities for doing so currently exist. There are also examples which may be cited. Sales to the state are presently proceeding quite briskly for animal husbandry products on the kolkhozes imeni V. Kingiseppa and "Kal'yurand" in the Kokhtla-Yarveskiy Rayon, on the kolkhozes "9 Maya" and "Oktober" in the Paydeskiy Rayon, on the kolkhoz "Kazari" in the Khaapsaluskiy Rayon, on the kolkhoz "Emayye" in the Tartuskiy Rayon, on the sovkhozes "Syrve" and "Ranna" and "Pyarnu", and on many other farms.

Currently, the average daily weight gain for farm-fattened animals is quite high, as is their realized weight. For the first ten months, the average daily gain in the beef cattle held on fattening programs amounted to 616 grams, an increase over the previous year of 69 grams. The average daily weight gain for fattening hogs amounted to 461 grams, and in October--as much as 471 grams. Last year, in the republic this indicator averaged 409 grams. Nonetheless, not all capacities for intensifying the fattening of hogs are being utilized. As an indication, in the Yygevaskiy, Kokhtla-Yarveskiy and Pyarnuskiy rayons, each fattening hog acquired an additional 515-532 grams per day in October--significantly more than the average for the republic.

Proper organization of labor on farms, skillful and efficient use of feeds, greater responsibility for farm workers, improvement in their working and living conditions, improvements in the fields of livestock technology and veterinary service--these are the things which should be everywhere at the focus of attention and under the guidance of farm leaders and local Party organizations. Only in this way will it be possible to establish a solid basis for future improvement in the production of milk and meat.

The republic average realized weight for fattened beef cattle sold to the state in the first ten months was 430 kilograms, while in the Paydeskiy and Rakvereskiy rayons, it exceeded 450 kilograms. Hogs weighed on average 105 kilograms. Increasing the realized weight of livestock--most importantly beef cattle--is one

of the principle means of intensifying meat production. However, even in such a legendary meat producing area as the Yygevaskiy Rayon, marketed beef cattle on their way to the packing combine weighed an average of only 427 kilograms.

Milk Procurement and Dairy Cow Productivity

For January--October 1983

Rayon	Milk Procured on All Categories of Farms--As a Percentage Compared With: Annual Plan	Corresponding Period - 1982	Average Milk Yield Per Cow On Kolkhozes And Sovkhozes in kg	Increase Over Corresponding Period - 1982 in kg
1. Khaapsaluskiy	100.6	118	2998	342
2. Kingiseppskiy	96	112	2854	236
3. Pyarnuskiy	96	112	3345	291
4. Khiyumaaskiy	95	114	2960	266
5. Raplaskiy	94	123	3220	474
6. Khar'yuskiy	93	118	3151	401
7. Rakvereskiy	93	113	3470	322
8. Paydeskiy	93	119	3481	410
9. Vil'yandiskiy	91	114	3271	368
10. Valgaskiy	91	106	2763	202
11. Vyruskiy	91	109	3046	181
12. Yygevaskiy	90	112	3202	255
13. Pylvaskiy	90	104	3151	87
14. Tartuskiy	90	112	3039	237
15. Kokhtla-Yarveskiy	89	111	3049	272

9 November 1983

Measures undertaken last year toward intensification of livestock production on individual subsidiary farms have also begun to show results. During the first ten months of last year, the inhabitants sold to the state either directly or through the farm 15,700 tons of cattle, whereas in the same period this year, the figure is 27,000 tons. For the ten month period last year, the inhabitants sold 163,600 tons of milk--this year 174,800 tons. The size of cattle herds on individual farms is increasing. This year alone, the inhabitants have purchased more than 176,000 suckling pigs. Sales of suckling pigs to the inhabitants have particularly increased in the Yygevaskiy, Kokhtla-Yarveskiy, Khiyumaaskiy, Pylvaskiy, and Pyarnuskiy rayons.

Despite the fact that more suckling pigs and calves were produced this year than last, and that on November first the number of hogs was 1 percent greater, and the number of fattened beef cattle 0.2 percent greater than last year, problems in reproduction of the herd on many farms are causing alarm--as they have in the past. The heavily stressed objectives for next year with regard to the production and procurement of animal husbandry products require that by the end of the year, livestock populations on the farms will be larger, and that significantly greater numbers of suckling pigs will be produced and significantly greater replenishment of the dairy herd will take place during the first

months of 1984 than was the case this year. In the meantime, many farms in the Valgaskiy, Vil'yandiskiy, and Vyruskiy rayons have experienced reductions in their herds of valuable beef cattle. The number of hogs has declined on farms of the Kingiseppsky, Khar'yuskiy, and Rakveresky rayons. Increasing the herd is not an objective which exists for its own sake. The size of the herd must be kept at an optimal level in order to fulfill governmental requirements.

Meat Procurement and Average Daily Weight Gain in Fattening Cattle for Jan-Oct 1983

Rayon	Cattle and Poultry Procured On All Categories of Farms- As a Percentage Compared to:		Average Weight Of Procured Cattle--in kg		Average Daily Weight Gain for Cattle Fattened On Kolkhozes and Sovkhozes--in g	
	Annual Plan	Corresponding Period - 1982	Cattle	Hogs	Cattle	Hogs
1. Khar'yuskiy	90	117	440	98	630	455
2. Valgaskiy	90	133	414	105	620	419
3. Rakveresky	88	131	458	107	658	445
4. Vyruskiy	88	131	415	113	611	453
5. Paydeskiy	87	145	456	106	626	488
6. Raplaskiy	86	132	436	102	696	456
7. Khaapsaluskiy	86	127	419	101	682	452
8. Yygevaskiy	85	126	427	107	601	459
9. Pyarnuskiy	84	118	426	104	624	507
10. Vil'yandiskiy	84	125	431	111	645	503
11. Pylvaskiy	84	115	427	105	644	437
12. Khiyumaaskiy	84	103	436	107	658	495
13. Tartuskiy	83	123	417	108	534	430
14. Kokhtla-Yarveskiy	81	125	421	106	586	449
15. Kingiseppskiy	80	110	403	98	624	470

9 November 1983

A particular unease has been caused by the reduction in the size of the sheep herd. Though their numbers are steadily increasing on farms of the Kingiseppskiy Rayon, they are declining on the kolkhozes and sovkhozes of the Yygevaskiy, Tartuskiy, Khar'yuskiy, and other rayons. Decisions handed down by supervisory agencies call for a continuing increase in the size of sheep herds. It is incumbent upon Agprom ESSR[Council for the Agro-industrial Complex, ESSR] and rayon-level agro-industrial associations to adopt measures for the further development of sheep raising enterprises.

The cattle are well into the wintering period. Whether or not it is successfully carried through will depend in large measure on the results of the efforts of livestock specialists during the remainder of this year, and next year as well.

Agroprom Discusses Progress, Problems

Tallinn SOVETSKAYA ESTONIYA in Russian 17 Nov 83 p 1

[Text] For the agricultural workers of our republic there is now something to take pride in: making good use of unusually favorable weather conditions, and working within a critically optimal agrotechnical time frame, they have completed all field work, brought in a decent harvest, and improved the cattle feed base. These accomplishments received particular mention at the meeting of the presidium of Agroprom[Council of the Agro-industrial Complex]ESSR, which took place on November 16 in Tallinn.

It was pointed out that for the first nine months of the year, there was an average yield of 2925 kg of milk per dairy cow, which was 306 better than for the same period last year. There was an increase in average daily weight gain for young animals and fattening livestock. As a result, assigned objectives for the first three quarters with respect to milk, meat, and egg sales to the state have not only been fulfilled, but exceeded in the bargain.

It should be emphasized that the improved results were seen on farms operating under difficult economic conditions.

Land reclamation specialists also turned in commendable performances: the annual plan requirements for the exploitation of arid lands were fulfilled as early as the first of October.

On the negative side, however, there were shortcomings noted in the work of kolkhozes, sovkhozes, and "Sel'khoztekhnika" enterprises: in some rayons, insufficient attention is being paid to vehicle and heavy equipment fleet maintenance, not to mention conservation and proper use of gas and oil. Construction workers are lagging behind--not meeting plan requirements for the nine months with regard to housing construction.

As for the harvest--it is in the granaries, and right now there is no more important objective than to ensure its safe storage without losses. The farms this year have put up record quantities of high-quality grassy feeds. Their rational use will be an important factor in determining not only whether existing gains are consolidated, but also the extent of future gains in livestock production.

The meeting took note of the need to strengthen monitoring procedures with regard to those farms which this year failed to significantly increase the productivity of their dairy herds. Each RAPO[rayon agro-industrial association] should adopt supplemental measures for intensifying efforts to replenish herds.

Winter is the time of preparation for the new farm year--thus, every day of this time is worth its weight in gold for farm workers. Repair of machinery, improvement of worker skills, and problems of seed storage are all considerations which should remain foremost on each day's agenda.

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POTENTIAL FOR ACCELERATING BEEF CATTLE RAISING EXAMINED

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 12, Dec 83 pp 26-27

[Article by N. Vostrikov, rector of the Orenburg Agricultural Institute and candidate of economic sciences: "Reserves in Livestock Raising for Meat Purposes"]

[Text] Economic calculations show that it is impossible to fully satisfy the needs of the population with regard to beef by means of dairy farming alone, even with the most intensive utilization for meat of all surplus animals that will not be needed in herd replacement. For this reason the utmost development of specialized meat livestock raising is one of the most important goals for the republic's agro-industrial complex.

The intensiveness of this branch is determined by many factors. It also depends on how well breeding work is organized, for under modern conditions this work plays a decisive role. In order to more clearly understand the significance of work in this direction let us turn to the following data. If we were able to increase the delivery weight of each head of cattle sold to 400 kilograms the country would have about 2 million tons of beef extra. This type of increase is sufficient to successfully fulfill production quotas during the 11th Five-Year Plan.

It must be said that possibilities for this do exist. Numerous production experiments show, for example, that young bulls of the Kazakh White-Faced, Kalmyk, Hereford, Shorthorn and Charolais breeds can achieve an average daily weight gain of 900-1,000 grams, reaching 550-590 kilograms by the age of 18 months. Here the feed expenditure per quintal of weight gain does not exceed 60-65 feed units at a cost of 81-86 rubles. This enables us to obtain 780-970 rubles per head in profits from the sale of animals. The profit level reaches 200 percent.

Moreover, young bulls have been found in the herds of various breeds that can gain weight at the rate of 1,400-1,500 grams per day in the period between eight to 15 months of age. At around 15 months they weigh 500-600 kilograms. In connection with the high coefficient of inheriting this characteristic, the descendants of these types of bulls can achieve a weight gain that is greater than the herd average by 300-400 grams under equal maintenance and feeding conditions. Since the intensity of growth in calves secures a high live

weight, a good return on feed and a significant protein output per carcass, breeding work in this direction is extremely effective.

Thus, the proper selection of breeds with regard to maintenance conditions as well as the development of new breed groups of livestock that combine high meat productivity and dependable adapting characteristics are considerable reserves for increasing beef production and for decreasing its cost.

The rapid development of meat livestock farming as a branch and the success of its work depends greatly on the intensiveness of raising calves prior to weaning. The fact is that an increase in expenditures of labor and resources on livestock farms, in contrast to other branches of livestock raising, results in a decrease in production profits since the only "product" of the meat cow is the calf no matter what the capital investment. Since meat livestock raising yields only one type of commodity product, all expenditures for maintaining the basic herd are placed on the cost of calves at weaning. For this reason the effectiveness of the branch will be determined firstly by the output of calves (per 100 cows), their live weight at weaning at the age of 7-8 months, subsequent productivity and by costs for the upkeep of cows in the course of the year.

In order to clearly understand specific ways of increasing the effectiveness of livestock raising for meat purposes let us examine the situation in this branch in the breeding enterprises of the Southern Urals (Table).

Indicators	Productivity	
	Scientifically-based	Actual
Output of calves per 100 cows, heads	90-95	70
Average live weight of calf at weaning, kg	250-280	180
Average daily weight gain, grams:		
suckling	900-1,000	600
over 8 months old	1,000-1,200	501
Feed expenditures per kilogram of increase (with consideration of feeding cows), feed units	12-14	18.5
Live weight of replacement calves at age 18 months, kilograms:		
male calf	500-550	380
female calf	350-400	280
Raising pedigree male calves per 100 cows, heads	35-40	18
Sale of male calves of the elite and elite-record classes, %	85-90	42

As we can see, there are many unutilized reserves. The most significant involve the rapidity of growth of calves being suckled and during the post-weaning period as well as decreases in feed expenditures.

The economic effectiveness of pedigree livestock raising depends primarily on the quantity and quality of calves sold for breeding purposes, which is based on the intensity of raising calves from birth until the time they are sold. This is why attention should be given to the upkeep of calves during the suckling period, when the cost of average daily weight gain is particularly high because of the expenditures for the upkeep of the cows. However, improvements in the class of calves that are sold can compensate for these expenditures.

In order to decrease the expenditure of feed it is essential to accelerate the growth of calves. For example, it has been determined that in raising and fattening calves weighing 300-500 kilograms an increase in the average daily weight of from 600 grams to 1 kilogram enables us to curtail feed expenditures by over double per unit of growth. This is explained by the fact that when growth is slow the number of days needed to achieve slaughter weight increases which leads, naturally, to the growth of non-productive feed expenditures.

Modern intensive technology for raising pedigree calves in industrial-type enterprises enables us to achieve an average daily weight gain of 900-1,200 grams for male calves. This kind of growth intensity is being achieved by scientific-research institutes and leading enterprises in the country in their experiments. As the feed base is strengthened and the methods for preparing feed and for feeding (full-ration mixtures) improve in the coming years it will be possible to achieve average daily weight gains of 1,200-1,300 grams.

The Sputnik Sovkhoz of Svetlinskiy Rayon is a breeding enterprise, raising the Kalmyk breed for the eastern regions of Orenburg Oblast. Here there was a business-like approach to livestock raising for meat purposes--the feed base was improved, the uninterrupted operation of the feed shop was secured, and the preparation of semi-moist feed mixtures was assimilated. Having skilfully organized the work to reproduce the herd, the enterprise turned to calving in turn. In the three months January to March up to 85 percent of calves began to be produced.

Since 1975 calves have been raised according to the intensive method in the sovkhoz. From the age of 9 days calves are taught to eat coarse and concentrated feeds. Special sections with free access and exit for calves have been equipped with troughs. Everything taken together enabled the sovkhoz to increase the daily weight gain of calves being suckled to 700-850 grams. The weight of calves at weaning may reach 200 kilograms. This enables the Sputnik to overfulfill its quota for the sale of meat to the state each year. After the operational start of the industrial complex meat production increased by 37 percent in the enterprise as compared with the 10th Five-Year Plan. The sovkhoz annually receives about 2 million rubles in profits.

At the same time I would like to warn against a common error when trying to achieve a large weight gain--the use of large quantities of concentrated feed in rations. It should be kept in mind that the concentrated type of feeding not only does not correspond to the biological characteristics of meat livestock but salso results in a non-efficient utilization of forage grain.

Our studies show that the raising of pedigree calves is most effective when the optimal expenditure of concentrated feeds--25-30 percent of the total nutritive value of rations--is implemented. There should be a maximal use of coarse, succulent and green feeds as a priority. It is essential to first increase the productivity of natural feed lands and to use them more efficiently. In order to compensate for the shortage of protein it is necessary to increase the production of legumes, to raise the productivity of alfalfa and sainfoin and to more extensively utilize synthetic nitrogen compounds and vitaminous and biologically-active supplements.

The unsatisfactory operations of meat livestock raising can be explained to a large degree by the low level of specialization in breeding sovkhozes, which do not include meat livestock raising as a leading branch. In volume of annual income it occupies a rather low ratio--from 13 to 40 percent. Most are multi-branch enterprises with completed herd turnover. Only in individual breeding enterprises does specialization foresee farms for obtaining and raising calves prior to weaning, for raising replacement calves and for fattening livestock. In most regions of the republic beef production on a cooperative basis is being introduced slowly. It is essential to more actively recruit the reproducers of meat calves, specialized farms for the raising of heifers and non-calving young cows as well as fattening complexes and platforms into the branch's activities.

The development of pedigree meat livestock raising is being hindered by the absence of an effective technology for the upkeep and feeding of livestock. In many kolkhozes and sovkhozes it has been borrowed from dairy farming. There are no model farms and complexes for pedigree meat livestock. Not infrequently livestock is maintained tethered in expensive facilities with a low level of mechanization of production processes. As a result the cost of a livestock place reaches 2,000 rubles. The load per worker does not exceed 50-60 cows and labor expenditures for the production of a quintal of product reaches 50-60 man-hours in some enterprises. Because of this the cost of a quintal of growth remains high--190-200 and more rubles.

The capital-output ratio of meat livestock raising is not high. For this reason one of our goals is to decrease the proportion of capital investments per livestock place and to decrease expenditures for the upkeep of a meat cow when planning production capacities. Unfortunately, the existing planning system, especially as concerns building (fulfillment of plans with relatively small work volume), is interested in expensive materials. With increased expenditures the effectiveness of utilizing capital investments will drop noticeably. Moreover, the cost of a calf increases in proportion to expenditures. As a result, farms raising livestock for meat purposes, which were built with large capital investments, suffer losses from the sale of calves.

In summarizing what has been said I would like to single out the most important measures which in my opinion can raise the effectiveness of pedigree meat livestock. There is no doubt that the road to success lies in more complete specialization of breeding farms. It would be desireable to increase the herd of meat cattle to the optimal number (no fewer than 1,100-1,500 cows).

It is apparent that production in breeding enterprises should proceed with the utilization of the enterprise's own feed. To do this it is essential to strengthen the feed base on the basis of an intensification of field feed production, and of increasing the procurement of hay and haylage.

With the goal of rapidly increasing the herd of livestock utilized for meat purposes we must not allow the mistake of submitting for slaughter pure-breed and crossbreed meat calves that can be utilized for the purposes of reproduction.The time has also come to take measures to make sure that the herd recovers rapidly from infectious diseases. It is imperative to bring no fewer than 80 percent of the calves born to their first calving.

One final thing must be said. We must noticeably improve the quality of pedigree calves that are sold. This is why pedigree enterprises must build testing stations and systematically evaluate all animals, especially bulls, for productivity and the quality of progeny. This will enable us to direct breeding work toward accelerating growth and toward developing valuable pedigree herds.

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LIVESTOCK

DEVELOPMENT OF CATTLE BREEDING IN SIBERIA

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 11, Nov 83 pp 2-4

/Article by M.D. Chamukha, director of SibNIPTIZha and corresponding member of the All-Union Academy of Agricultural Sciences imeni V.I. Lenin: "Selection Program for Breeding Work"/

/Text/ With the creation in Siberia of new energy systems and large industrial centers for the mastering of natural resources, special importance is being attached here to organizing a strong food base and particularly to satisfying the population's requirements for animal husbandry products. In conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "All-Round Development of Agriculture in the Regions of Siberia, the Far East and Kurgan Oblast," milk production must be increased to 12 million tons by 1990 and meat production -- to 13.8 million tons. This task must be solved mainly by raising the productivity of the animals. In particular, the milk yields must be raised to 2,700-3,000 kilograms per cow and the daily increase in the live weight of cattle to 600-700 and for swine -- 500-600 grams. The realistic nature of these tasks is borne out by the achievements of leading oblasts in our region. Two of them (Magadan and Kamchatka) have already achieved milk yields of 3,500 kilograms per cow. The milk yields for the region as a whole, depending upon the economic rayons, amount to from 2,026 to 2,225 kilograms.

The average daily increase in live weight in young cattle stock, for the region as a whole, amounts to 370-380 grams and during fattening -- 420-430 grams. Moreover, at such leading farms as the Nazarovskiy Sovkhoz in Krasnoyarsk Kray, the Bol'shevik Kolkhoz in Novosibirsk Oblast and a number of other others, very stable indicators have been achieved -- 720-750 and 1,000-1,100 grams respectively.

The main program for developing animal husbandry includes implementing improvements in the pedigree and productive qualities of the animals, while simultaneously developing feed production and improving the technology. All of these problems are elements of the same chain, the harmonious implementation of which must solve the task of further intensification of the branch.

Through the joint efforts of agricultural scientific workers and production specialists in the region, a breeding base has been created and, as a result, large groups of pedigree animals. At the present time, the offspring of black

variegated cattle constitute approximately 80 percent of the overall number of animals in the zone of intensive dairy cattle husbandry. Ninety percent of the 15 million sheep in the region are descendants of strains created in Siberia or their hybrids. Siberian swine strains are being employed effectively in industrial swine raising operations.

The strains of Siberian selection possess high productivity and an adaptability to local conditions. Some of them, for example the Altay strain of sheep, which combines high wool productivity with a good polycarpic effect, occupies a leading place among the world's fine fleece strains. Highly productive lines and plant types have been created during the course of improving the strains.

However, with the intensification of agricultural production and the introduction of an industrial technology, the logistical expenditures required for maintaining the livestock and for the production of goods are increasing. Moreover, the intensity of this increase is exceeding the rates for increased livestock productivity. As a result, the economic indicators of the branch and in the final analysis its productivity are declining.

Compared to the 8th Five-Year Plan, this productivity at sovkhozes in western Siberia during the 10th Five-Year Plan declined from 13 to 0.3 percent, in eastern Siberia -- from 16 to 6 and in the Far East -- from 17 to 0.1 percent. All of this requires an acceleration in the selection process, with consideration being given to the fact that as improvements are realized in the productive and breeding qualities of the animals, it becomes more difficult to develop the genetic potential.

Under these conditions, the principal requirement must be primarily a high level of productivity for the animals, in view of higher payments for feed, so as to ensure repayment for those expenses associated with the intensification of the branch and, in particular, with its technical equipping. At the same time, the animals must be able to adapt sufficiently to the new technology, bearing in mind that the equipment in use removes them more from direct contact with man and the natural environment. In view of the changed environmental conditions and the constant increase in physiological stress, associated with the increasing level of productivity, the selection work must be carried out also for strength and endurance in an organism.

Thus, under the conditions imposed by the industrial technology, the formational factors of an organism remain the same -- genotype and environment -- but the latter, during the course of production industrialization, comes more into conflict with the biology of an animal. In order to achieve selection improvements in animals under these conditions and taking into account the concentrating of animals at large mechanized farms, appropriate improvements are required in the methods and equipment required for carrying out breeding work.

The first condition, without which reliable organization of breeding work is impossible, is that of raising and selecting full-value replacement animals. Bearing in mind that the industrial technology causes intensive wear and tear in animal organisms, the principal herd must be supplied with highly productive animals having strong constitutions. This is why the modern progressive technology includes the organization of specialized farms for the raising of

heifers on a scientific basis. And the selection must be carried out at the proper productivity level through control yards.

In the case of concentrations of animals, the breeding work will be carried out on the basis of group selection, which requires considerably fewer labor expenditures than individual selection. Moreover, when working with populations and without taking into acoount the individual combining of pairs, decisive importance with regard to the quality of the offspring is attached to the breeding qualities of the sires, which combine high productivity and inherited characteristics.

The effectiveness of large-scale effectiveness can be ensured only through good organization of checks carried out on sires for the quality of their offspring. One substantial hindrance in this regard -- imperfections in the breeding records and, in this regard, errors tolerated in establishing the parentage of animals and their offspring.

In order to eliminate this shortcoming in breeding work practice, more extensive use is being made of immunogenetic methods for establishing paternity. Towards this end, zonal immunogenetic laboratories are being organized attached to breeding associations for the purpose of studying blood groups and exercising control over the paternity of animals. According to data supplied by these laboratories, the paternity mistakes in some instances, established on the basis of breeding records, reach 30 percent or more. Thus the task is one of ensuring the planned testing of all pedigree animals being delivered to artificial insemination stations and breeding enterprises and also those used at breeding plants.

During the 11th Five-Year Plan, in the interest of accelerating the rates for genetic improvements in the strains and sharply raising the level of productivity and in addition to pure-bred breeding, more extensive use should be made of introductory crossings for the purpose of enriching the inheritance base and creating more productive genotypes having a raised repayment for feed and, it follows, better able to meet the requirements for an industrial technology.

The use of this method was deliberately limited earlier in the fear that the genetic founcation, saturated with the blood of pure-bred animals, especially imported livestock, would not conform to the extensive conditions of livestock maintenance which prevailed in the region.

With the intensification of the branch and the introduction of an industrial technology, the animals were protected more from the effects of the natural environment through the creation of artificial, that is, controlled conditions for feeding and maintenance, under which pedigree animals can be produced in a normal manner.

The productivity of Holstein-Friesian cattle of the Sakhalin Branch of Dal'NIISKh /Far Ease Scientific Research Institute of Agriculture/ exceeds 6,000 kilograms of milk per cow. This is one of the most productive herds in the country. At the Borovskoye OPKh /experimental farm/ of SibNIPTIZh, Holstein-Friesian hybrids during their first lactation produced milk yields of

4,972 kilograms over a period of 305 days, or 496 kilograms more than their pure-bred counterparts. Similar indicators were achieved on other farms in the region.

The high genetic potential of bulls of the Anglerskaya strain was used by SibNIISKhOZ in improving the red steppe strain cattle. Moreover, the first generation hybrids produced 773 more kilograms (25.9 percent) of milk than their mothers during lactation. Similar results are being obtained from crossings of Simmental cows with red Holstein Friesian animals and bulls of the Ayrshire strain. During the 11th Five-Year Plan, this work must be expanded to regional scales in connection with the creation of new types of dairy cattle for the industrial technology.

The well thought out system for using highly productive specialized imported strains in Siberia is producing fine results with regard to the creation of new intensive strain types not only in dairy cattle husbandry. Promising work lies ahead in connection with the creation of a new type of beef cattle for Siberia. During the first stage, two plant lines of Siberian bred Herefords were approved at the Sonskiy Sovkhoz in Krasnoyarsk Kray, each of which has a productivity on a par with the international standards. The average daily increase in their live weight, during intensive fattening, is 1,200-1,400 grams daily, with an expenditure of 8-8.5 feed units per kilogram of increase in live weight. Sires exhibited at the VDNKh /Exhibition of Achievements of the National Economy of the USSR/ won awards 4 years in a row and are being used for creating a state semen bank.

At the present time, there are more than 70,000 head of beef cattle in Siberia. This number will have increased considerably by the end of the five-year plan. Owing to early maturity and a high return from feed, the breeding of beef cattle in Siberia is showing a stable profit. One head furnishes 106 rubles worth of profit. Further work in this regard will be directed towards the breeding of a new type of beef cattle. This is an important breeding base and one which will serve as the foundation for creating a large contingent of specialized beef cattle not only for Siberia but for other regions of the country as well.

Deserving of attention is all-round work of a similar nature being carried out in connection with the creation of a new type of meat and wool sheep for the intensive regions of western Siberia. Through the complex crossing of fine fleece-coarse wool hybrids with Lincoln and Romney Marsh rams, herds of early maturing heat and wool sheep have been created having crossbred wool and a washed fiber wool yield of 2.8-3 kilograms, which is twice as high as that of the initial hybrids used for crossing. During fattening, this new type of sheep consumes 7.5-8 feed units per kilogram of weight increase, compared to 10 feed units for the fine-fleece hybrids. Pedigree farms for breeding them were approved which provide a breeding base for creating many sheep of this specialized line in Siberia. Meat and wool sheep raising is developing in an effective manner in the forest-steppe regions of intensive farming, where there are approximately 300,000 such sheep, with future plans calling for up to 1 milllion sheep to be maintained here.

The crossing of Siberian fine-fleece strains (Altay, Trans-Baykal and Krasnoyarsk) with sires of the Australian strain holds great promise for fine-

fleece sheep raising. The wool yield from hybrids of this crossing is 12-15 percent higher than that being obtained from pure-bred fine-fleece sheep, with the quality being improved considerably. At the Uchumskiy Breeding Plant, which breeds sheep of the Krasnoyarsk strain, the hybrids from such a crossing produce a profit of 18.5 rubles per sheep compared to 11.5 for the pure-bred Krasnoyarsk strain, with the profitability being 52.2 percent compared to 31.9 percent. The task has been assigned of creating a new type of fine-fleece sheep in Siberia possessing blood of the Australian strain.

The use of the Landras strain for crossing with the Kemerovo strain of hogs and specialized work carried out with them has resulted in the creation of a new bacon type in the Kemerovo strain. Animals of this type surpass the standard elite class for the Kemerovo strain by 8.4 percent in early maturity and by 6 p:rcent in terms of feed expenditures. They achieve a weight of 100 kilograms in 177 days and a meat yield of 59-57 percent.

Such are some of the results as well as future tasks associated with improving existing and creating new strains of agricultural animals under conditions involving further intensification of industrial animal husbandry operations.

Simultaneously with improving the strain qualities, a requirement exists for creating a base for realizing more completely the genetic potential of the animals. Proper nourishment is considered to be a chief factor for ensuring realization of the genetic base. The region's farms are being supplied with feed up to 60-80 percent of the existing norms, or 13-15 quintals of feed units in western Siberia and 10-11 quintals in eastern Siberia and the Far East perstandard head annually. Moreover, as a rule the existing norms are deficit in terms of the principal nutrients, as borne out by the low protein content -- 75-90 grams per feed unit.

The low quality of the feed in the absence of appropriate preparation for feeding to the animals and also the lack of balance in the ration results in considerable overexpenditures of feed. Over the past decade, a stable trend was observed towards a reduction in the return from feed in the form of products. At kolkhozes and sovkhozes in western Siberia, feed consumption per quintal of milk increased from 1.33 to 1.49 quintals of feed units and per quintal of increase in live cattle weight -- from 11.1 to 13.5; in eastern Siberia the figures were respectively from 1.41 to 1.54 and from 10.7 to 12.1; in the Far East -- from 1.41 to 1.57 and from 11.9 to 13.5 quintals of feed units. This exceeds the zootechnical norms by 20-30 percent. An extremely high overexpenditure of feed has been tolerated on farms in the Tuva ASSR, where 2.57 quintals of feed units have been consumed per quintal of milk.

Thus, notwithstanding the improvements in strain qualities, which undoubtedly produced positive results during the 10 year period, feed consumption per unit of output did not decline but rather it increased noticeably. The expenditure of grain for feeding to livestock is increasing at an unacceptable rate. On some farms, for example in Magadan Oblast, concentrates are being consumed at the rate of 0.6-0.65 kilograms per kilogram of milk. Such an expenditure of grain for feeding to cattle is not justified from either a physiological or economic standpoint.

Very conclusive data has been obtained in this regard from experiments carried out at SibNIPTIZh. Here, during the course of improving a pedigree herd of black variegated Siberian bred cattle, optimum types of feeding were developed. As a result, success was achieved in providing a raised energy level in the food, not through an overexpenditure of concentrates but rather by means of a balanced ration containing high quality coarse feed. During this experiment, the concentrate level used in the raising of heifers was lowered to 20 percent and in the process the heifers achieved a live weight of 390 kilograms by 17 months of age and were fruitfully inseminated. During the first lactation they produced 5,317 kilograms of milk. This level conforms to the productivity level of the better dairy herds at breeding plants.

The use of poor strain animals together with shortcomings in their feeding makes it difficult to introduce the industrial technology into operations, a technology which is expected to raise labor productivity while reducing production costs. There are presently 162 dairy complexes operating within the region. They are producing approximately 3 percent of the overall milk production. The majority of them, especially those in eastern Siberia, have economic indicators on a par with conventional farms. The main reasons for this -- weak feed base and the use of low productivity animals. As a result, their planned capability has been developed to only 55 percent. On those farms where these problems have been solved, the organization of complexes has proven to be effective. For example, at dairy complexes in Omsk Oblast on the whole, the average milk yield per cow surpasses the level for conventional farms by 25-30 percent and labor productivity is correspondingly higher.

It follows from the above that as improvements take place in the production technology, the productive potential of the strains must be increased at corresponding rates and this in turn requires improvements in the forms for carrying out breeding work. During the 11th Five-Year Plan, breeding work programs must be developed for all of the principal strains of animals being bred in the region and this must be accomplished based upon the latest scientific achievements in breeding and genetics. We must complete as rapidly as possible the organizational period for the formation of the animal husbandry breeding center attached to SibNIPTIZh, as approved by the RSFSR MSKh /Ministry of Agriculture/ in August 1981.

Improvements in the strain qualities of livestock must be viewed as being a component part of the technology, since strain improvements determine to a considerable degree the effectiveness of feed utilization, that is, the conversion of feed into products and reimbursement for other expenditures associated with converting the branch over to an industrial basis.

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LIVESTOCK

DEVELOPING KAZAKH HERD REPRODUCTION POTENTIAL

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 11, Nov 83 pp 24-25

[Two letters, by M. Chirkunov, division chief of the Main Administration for Breeding in Animal Husbandry of the Kazakh SSR Ministry of Agriculture, and V. Zubriyanov, division chief of the KazNITIZh, doctor of agricultural sciences: "Reserves Available to Each Farm"]

> [Text] "... Controlled improvement of the breeding qualities of animals is in the hands of man, who organizes productive animal husbandry, breeding work, the feed base, and the farm as a whole."
>
> Ye. F. Liskun, academician

First Letter

In the practical implementation of the Food Program, in addition to creating a stable feed base, a significant position is assigned to further raising the level of selection and breeding work in animal husbandry, which is directed toward improving existing and creating new breeds, breeding groups, lines and hybrids of animals, and toward improving their productive qualities.

Our republic has created a large base for breeding animal husbandry: 70 breeding enterprises and 120 sovkhozes, 500 farms and 20 state stations for breeding and artificial insemination of agricultural animals. In recent years we have organized 48 additional breeding enterprises and 228 farms, tested two new breeds of sheep and hogs, two industrial types of sheep and nine highly productive strains of cattle. The sovkhozes and kolkhozes have increased the proportions of purebred animals, which amount to 21 percent for cattle, 65 percent for sheep and goats, 51 percent for hogs, and 16 percent for horses. There are considerably more young of elite breeds. They now include 46 percent of the steers and calves sold to the farms, 15 percent of the lambs and baby goats, 69 percent of the piglets and 56 percent of the colts.

The high genetic potential of the breeds propagated in the republic, which undoubtedly should be placed in the service of the overall cause, is confirmed by the indicators of the leading breeding farms. The average milk yield per cow of the Alatau breed on the Kamenskiy breeding farm in Alma-Ata Oblast exceeded 4,700 kilograms. The Auliyeata breed which is propagated at the Chimkent state strain testing station makes it possible to obtain more than 4,300 kilograms of milk per cow, and from the Red Steppe breed, the leading

one in the republic, at the Krasnaya Polyana breeding enterprise in Dzhezkazgan Oblast they obtained 3,400 kilograms per cow. Good results were achieved from the Simmental breed on the Kolkhoz imeni V. I. Lenin in Vostochno-Kazakhstan Oblast; the brown Latvian breed -- on the Michurinskiy Breeding Farm in Kustanay Oblast; and the black spotted breed -- on the Ul'binskiy Breeding Sovkhoz in Vostochno-Kazakhstan Oblast. These farms obtained 3,200-3,300 kilograms of milk per cow.

The republic has other remarkable breeds of animals as well. These include the Kazakh white head breed of cattle, Edil'bayev sheep, the Kushum breed of horses and others. But the high productive qualities of these animals are not being fully realized even on many breeding farms. And on commercial farms they are almost entirely unassimilated.

At the present time the selection and maximum utilization of animals with the best economically useful traits constitutes the main reserve for increasing the productivity of the farms. In order to do this, it is necessary to evaluate the producers on a large scale to determine the quality of their offspring and to utilize to a maximum degree the improvement factors that are revealed. Herein lies the essence of large-scale selection work in animal husbandry, for which all the necessary conditions exist: the storehouses of the oblast state strain testing stations have created supplies of sperm of the best sire bulls in an amount of 8 million doses, and there is a network of artificial insemination points for cows and noncalving young cows on the sovkhozes and kolkhozes and also those which are privately kept by the population.

But, unfortunately, the great possibilities of mass selection work are far from being fully utilized. Thus while in Chimkent Oblast artificial insemination is available to 96 percent of the cows, in Turgay Oblast only 28 percent are provided with it.

An unfavorable situation with respect to the reproduction of the herd has arisen on many farms of the republic. And this deprives the selection workers of the possibility of severely culling the reproductive females. Under these conditions the main reserve for improving the breeds and increasing the productivity of the livestock is maximum utilization of the best producers of the state strain testing stations, which have been especially evaluated for quality of offspring and have been recognized as upgraders. Success in this matter depends largely on them. But this is underestimated on a number of kolkhozes and sovkhozes. And instead of comprehensively developing artificial insemination, they keep a large number of producers, which is absolutely unjustified.

The zootechnically incorrect raising of heifers and their selection for the replacement herd also plays a role in reducing the productivity of the cows. The experience of the leading farms shows that by using male animals for upgrading and also raising heifers in an organized way, skillfully preparing them for calving and organizing the increase of the milk yield, it is possible to increase the milk yield of each cow by more than 1,000 kilograms.

In addition to full-value feeding of cows and sire bulls, active motion of the animals exerts a great influence on the appearance of reproductive functions. The practice of the Pobeda Kolkhoz in Sayramskiy Rayon in Chimkent Oblast is worthy of dissemination. They have constructed a corridor for exercising the cows in the complex.

Accounting is necessary in order to conduct selection for the reproductive capacity of cows. They have acted correctly on the Aksay state breeding farm in Alma-Ata Oblast where, following the practice of selection workers of the Moldavian SSR, they have installed a stand for keeping track of the physical condition of the cows and heifers. This makes it possible to determine rapidly the date of calving of one cow or heifer or another, the productivity during the periods after calving or the first, second and third inseminations, and the expected calving time. All farms should have these stands since they contribute to improving all selection and breeding work. And while expanding it, we must also further develop our own base for breeding animal husbandry. We are speaking about the fact that it should not be necessary to bring livestock in from outside the republic. Data from scientific research have established that 22.2 percent of the bulls raised on the Peschanskiy state breeding farm in Pavlodar Oblast are upgraders, and this is true of only 4.2 percent of those imported from outside. Moreover, local animals are more adaptable to our severe conditions. And this is transmitted to the offspring.

The reserves for creativity of zootechnician-selection workers are truly boundless. We have a remarkable group of specialists who love breeding work and work creatively. The names of senior selection workers like A. Ye. Gavrasov and P. P. Shemshur are association with the creation of breeding herds of the Kamenskiy and Aksay farms, and they are sharing their extensive experience with the young selection workers V. P. Chizhegov and A. V. Pozdnyakov. There are enthusiastic breeding workers like these in every oblast. They must be supported and the achievements of the best should be more extensively introduced into production. Then the contribution of workers of the breeding service to the development of animal husbandry will be even more appreciable.

Second letter

The main object of selection work in dairy cattle husbandry is the breed. It is a means of production created by the labor of man and consequently should change in keeping with the progress of technology, which in dairy farming is becoming increasingly industrial.

The role of the director in the formation of a complex and well-arranged system in the breed, control of it, and improvement of the breeding and productive qualities of the animals is played by specially created councils for each planned breed under the republic Ministry of Agriculture, and these councils are headed by eminent selection workers. This is the main job in the activity of scientific institutions of a zootechnical profile of the Eastern Division of VASKhNIL. Our institute provides methodological guidance of selection work for the Simmental, Alatau and black spotted breeds, the Northern Scientific Research Institute of Animal Husbandry -- the red steppe

breed, and the Alma-Ata Zooveterinary Institute participates in the performance of work related to improvement of the Auliyeata breed and also the red steppe breed in Central Kazakhstan. Animal husbandry divisions of a number of oblast agricultural experimental stations participate in comprehensive research.

Work is being done in the republic to regulate the distribution of breeds; we have entered on a course toward increasing the number of black spotted cattle in the foothill regions of the large administrative and industrial centers; about 20 new lines are being created with a potential productivity of 4,500-5,000 kilograms of milk per cow; the number of breeding farms is increasing; elements of large-scale selection are being introduced with the application of the latest means of gathering, accumulating and processing information on electronic computers.

Extensive production experimentation has proved that the potential productivity of breeds of dairy cattle that are propagated is at the level of 4,000 kilograms of milk during the lactation period. I shall give only one of many examples. On the Kolkhoz imeni Tel'man in Pavlodar Oblast, on the whole for a herd of 117 Simmental cows, just as a result of normed feeding during a year the average milk yield increased from 2,860 to 4,224 kilograms. In the herds of the Alma-Ata and Luch Vostoka kolkhozes and the Kamenskiy breeding farm the milk yield is 4,013-4,720 kilograms. And if many farms have not yet reached this level, this indicates the large reserves which they are not realizing because of the shortcomings in raising heifers, increasing the milk yields of cows, and feeding and maintaining them.

The hereditary basis is almost the same on breeding farms with low and high productivity. For more than 10 years now the state breeding stations have been providing the farms with deep-frozen semen of sire bulls. Since this has been the case the majority of breeding farms do not keep their own bulls. But, as on commercial farms, the cows and heifers are inseminated with the semen of the same bulls or bulls with equally valuable breeding qualities. And if one takes into account that the bull determines 80 percent of the hereditary basis of the productivity of the offspring, one should evidently go more deeply into why, for example, the daughters of the bulls, Layner and Grom, on the Kamenskiy breeding farm last year produced 5,113-5,190 kilograms of milk, while several thousand of their sisters in the commercial herds in Alma-Ata Oblast did not produce half this much milk.

The main thing is raising the heifers. Science and practice have proved that when they reach a weight of 350-380 kilograms at the age of a year and a half, when they are inseminated at this age and with this weight, and when the subsequent milk yield is increased under optimal feeding conditions, one can guarantee a minimum yield of 3,000 kilograms of milk during the first lactation period and 4,000 during subsequent ones. In spite of this idea which has been confirmed in zootechnology, many farms put bulls in with herds of heifers that weigh barely 250-280 kilograms at 2 years of age. There is apparently no need to explain in detail that in a poorly raised cow, because of her overall underdevelopment, the physiological functions are so disturbed that subsequently, even with the most abundant feeding, one cannot obtain

either healthy calves, or a large milk yield or a heavy carcass when slaughtered.

The leading farms of our republic have long refrained from using bulls in herds of calves, and instead they are organizing artificial insemination with registration of the live weight. In our opinion, it would be expedient to introduce on all sovkhozes and kolkhozes mandatory registration of the weight and age of the heifers at first mating, and also the weight of the cows. This would obviously put a stop to unsubstantiated ideas that one breed or another is bad and should be replaced.

Correct raising of cows also promises many other advantages. This include, above all, economical and purposive utilization of feeds, especially concentrated feeds. The fact is that when developing normally a cow is capable of eating and digesting a large quantity of coarse and juicy feeds, that is, bulky feeds which provide both for maintaining her vital functions and for maintaining her productivity at the level of 3,000-3,500 kilograms of milk. And an underdeveloped cow with a poor appetite and is fussy about her feed needs mixed feeds which are less bulky but nutritious. This forces the animal husbandry workers to expend valuable and costly forage for less productive cows, at the expense of the highly productive ones, of course. The return from this is not only minimal, but is also economically unjustified.

Scientifically substantiated norms for the expenditure of concentrated feeds per liter of milk are from 150 to 300 grams. But several years ago in certain oblasts they expended more than 500 grams. The feed should not be divided equally among all the cows, but should be given to those that are capable of paying for it with an additional yield and, of course, it should be given to the young animals when they are being raised.

A large expenditure of concentrated feeds does more harm than good in dairy cattle raising. As early as the 1960's Prof. V. K. Milovanov established through special experiments that when a milk cow is given more than 350 grams of grain feeds per 1 liter of milk there is a deterioration of her physiological functions, which has a negative effect on fertility.

Taking the aforementioned circumstances into account, one can understand what at first seems to be a contradictory phenomenon which appeared several years ago. The expenditure of feeds for the dairy herd in the republic increased from 27 quintals of feed units in 1966 to 39.5 in 1978, and the expenditure of concentrated feeds more than doubled, but the average milk yield increased during this period from 1,705 to 2,065 kilograms, that is, by little more than 12 percent, and was far from equal in value to the overall level of feeding (42 percent). The yield of calves per 100 cows even decreased during this period. It is typical that expenditures of feeds on raising heifers increased by only 7.5 percent. They expended 1.86 quintals of feed units for producing 1 quintal of milk instead of the 1.0-1.2 which are recommended by the zootechnical norms.

Another extremely important element in dairy cattle raising is associated with preparing young animals for calving, increasing the milk yield of first

heifers, and monitoring their productivity. Farms with developed dairy cattle raising have long refrained from distributing noncalving young cows among the groups of milkmaids to replace cows that have been removed. Noncalving young cows are placed in the so-called control cattle yard or in individual groups for increasing milk yields. An entire complex of work is conducted to prepare them for calving -- they are become accustomed to the place, their feeding is normed, and their mammary glands are massaged. After calving the prepared cows are calmer, more easily controlled, the noise from working machine affects them less, and on the whole they are more stress resistant and more suitable for industrial technology. In the final analysis such cows produce 15-20 percent more products. This is also a fairly large reserve.

While emphasizing the importance of controlling the productivity of dairy cows, one should also discuss the zootechnical and breeding accounting in animal husbandry. In the past, with extensive forms of cattle raising, which were based on the utilization of natural sources of feeds and the simplest premises, one could still somehow put up with the lack of accounting and violations of it. The situation is different now. It takes 3-4 years to obtain and raise a cow. During this time and also afterwards 70-130 tons of various kinds of feeds are expended on her, 15-40 tons of milk and several calves are obtained from her, she is kept in a "comfortable" stable costing from 1,000 to 4,000 rubles, and she is fed and milked 2-3 times a day. Apparently all this makes it worthwhile to register the origin of the cow, to determine her productivity in the appropriate way and to introduce the necessary forms of accounting.

Thus the raising of a normally developed young animal, its preparation for calving, increasing the milk yield of first heifers in the control yards and organizing efficient distribution and feeding in keeping with productivity as well as the introduction of zootechnical accounting -- such are the main internal reserves of each sovkhoz and kolkhoz in the overall system of selection and breeding work. We are convinced that the realization of all of them will make it possible to take a significant step forward in increasing the production of milk and beef in the republic, which is one of the primary tasks in implementing the Food Program.

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DISEASE CONTROL OF LIVESTOCK IN LARGE COMPLEXES

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/Article by V.P. Urban: "Livestock Diseases Under Conditions of Industrial Animal Husbandry and Their Prevention"/

/Text/ When converting animal husbandry over to an industrial basis, conditions are created for the appearance of new diseases, the causative agents of which are quasi-pathogenic microorganisms which quite often appear in the form of associations. The diseases develop against a background of the animals being affected by unfavorable factors which arouse stresses in them. The extensive use of substances which act as immuno-depressants (for example, antibiotics) promotes the development of infections. The prevention of these diseases must be based for the most part upon the elimination of unfavorable conditions in the maintenance and feeding of the animals and also upon strict observance of the technology and the veterinary-sanitary rules. Dispensary operations involving a mandatory complex of biochemical studies should be carried out systematically in the form of control.

The conversion of animal husbandry over to an industrial basis constitutes a very promising method for developing the branch and one which is making it possible to solve successfully the problems concerned with raising labor productivity, increasing the quantities of products being obtained while lowering their production costs and also many social problems in the rural areas (1).

The experience being accumulated at the present time fully confirms the correctness of the path selected. This is borne out by the results available on the development of industrial poultry production. Nobody is surprised by the fact that we now have poultry factories which are maintaining a million head and successfully functioning and producing cheap products. Fine results are being realized at hog raising complexes and at farms of the industrial type engaged in the fattening of cattle. The situation with regard to the conversion of dairy farms over to an industrial basis is somewhat more complicated, since many problems concerned with the milk production technology have yet to be solved.

Heavy physical labor has been eliminated almost entirely at industrial animal husbandry enterprises, an 8-hour working day has been established and settlements of the municipal type are being created (2-9).

However, in discussing the advantages of industrial animal husbandry, mention should be made of those consequences which can ensue in connection with sharp changes in the maintenance conditions for the animals and large concentrations of animals in small areas. Many stress-producing situations can arise under the conditions found at such farms (10-14).

Accumulated experience testifies to the fact that the technology that has been developed and is now in use and also changing conditions to a certain degree have made it possible to prevent acute epizootic diseases at the complexes; for all practical purposes they are not being recorded here. However, they are being replaced by new diseases which are characterized by a number of peculiarities: regardless of the cause, they are massive in nature; arising as a result of non-communicable factors, they become communicable -- infectious -- with the passage of time; they appear within a farm in the absence of an accumulation of the causative agent from without, merely as a result of a quasi-pathogenic or even saprophytic microflora, which often brings about mixed or associated infections (15-27).

A number of new diseases occurring at the complexes are constantly increasing in scope. For example, various clinical forms of diseases caused by coliform bacteria have become a problem at hog raising farms -- coli-enteritis, septic coli-bacteriosis, nutritional edema. There are many diseases with uninterpreted or insufficiently interpreted etiologies: necrotic enteritis, ulcers, dysentery, hemophilic pleuropneumonia, mastitis-metritis-agalactia syndrome, vomiting syndrome and retarded growth, viral transmissive gastro-enteritis, stress syndrome and many others (28-37).

The etiology for many new diseases appearing in cattle has still not been clarified completely. This applies mainly to respiratory diseases, from which a large number of viruses, mycoplasms, chlamyds and other representatives of the microbe world have already been singled out. An extensive expansion has been observed in the spread of newly-born calf diseases, in the etiology of which a leading role is played by numerous viruses not known to science or practical experience (38-42).

There have been frequent occurrences of fertility, mastitis, abortions and entero-toxemia, caused by anaerobic microflora and, as well, a disease known as the "Hyena Syndrome" and many others have appeared (43-48).

What is the reason for the appearance of these new diseases and for the change in the role played by individual representatives of the microbe world in the pathology of animals? There is no simple answer for this question, since science does not have accurate data at its disposal for the many problems of microbiology and epizootology. For example, it is not clear where the line is drawn between a saprophyte and a pathogenic causative agent, why one and the same microbe causes different diseases or, conversely, why different causative agents produce the same clinical picture. It is also not clear why in some instances there are no diseases even when there is a causative agent present and in other instances -- under the same conditions -- diseases occur (15, 49, 50).

Available observations and studies are making it possible to take into account certain factors affecting the appearance of diseases and the peculiarities of their manifestations. This includes first of all a reduction in the overall resistance of the animals. During the construction of complexes, by no means is an attempt always made to satisfy in the best possible manner the requirements of the animals or to take into account their biological peculiarities. More often than not, such work is based upon economic computations and savings in resources and in the final analysis this is the cause of diseases occurring on a mass scale. Thus a reduction takes place in the space available in the facilities and in the floor area per animal, veterinary-sanitary units are eliminated from the plan and so forth. All of these factors lead to the appearance of unfavorable factors, to which highly productive animals are especially sensitive.

A concentration of animals in large groups leads to competition for leadership and, in the process, disturbances are observed in the digestion and dysbacteriosis functions in weaker specimens of animals, with infections commencing thereafter (44, 51, 53).

On farms where the animals have been gathered together on various farms, a mixing of the micro-organisms takes place and a change in the ration and in the animal living conditions brings about a qualitative change in the microflora, which affects the digestive processes, microflora accumulates in the environment, lactate microflora that is so beneficial to an organism is suppressed and conditions are created for the development of anaerobic and putrefactive microbes. The processes of putrefaction and fermentation are strengthened in the intestines and various types of bacterial toxins are formed -- endotoxins, exotoxins and enterotoxins -- which depending upon their nature, affect the central nervous system, liver and other organs and tissue, including the intestinal wall. When animals are concentrated in small areas, the pathology always assumes a group character -- "herd pathology," since the animals exist under the same conditions and are all affected simultaneously by the unfavorable factors.

Diseases which occur in a complex appear and develop under the influence of the environment and the entire ecological system. It is precisely this circumstance which leads to an outbreak of new diseases and to an increase in the number of diseases caused by quasi-pathogenic and even saprophytic microflora and to a change in the manifestations of specific, acute, infectious diseases. Thus our data indicates that a leptospirosis infection tends to remain stable at hog raising complexes and its clinical manifestations are not the same as those at small hog farms. The disease takes place in the form of epizootic flareups, with massive abortions taking place in the absence of any other clinical signs. A change also takes place in the course of the Aueski disease. In literature, especially foreign literature, there have been reports concerning flareups of various acute infectious diseases, which on farms having industrial production technologies ran their course in a sub-acute and atypical manner (43, 45, 52, 53).

At the present time, more and more data is being accumulated on the increase in polyetiological (polycausative) diseases, which include mainly diseases of the organs of digestion (54, 55).

It has been established in medicine that treatment with antibiotics adversely affects the microflora in the intestines and this is expressed in a reduction in the amount of normal representatives of the microbe world and in increased growth in putrescent microbes, pyogenic staphylococcus, yeast funguses and other unusual microorganisms. In turn, the developing dysbacteriosis is accompanied by a reduction in the antagonistic activity of pathogenic causative agents that enter the intestines and by a natural immunity of the intestinal tract (50). This situation also applies to animals. However, whereas man uses antibiotics only for treatment purposes and only rarely for prevention purposes, in the case of animals and especially at complexes, they are used constantly and at times according to the principle: regardless of the outcome. Thus it is often difficult at times to find an antibiotic that can be used for treatment purposes, in view of the fact that the intestinal microflora have developed an immunity to many antibiotics. And it is by no means an accident that gastro-intestinal diseases in animals have become an actue problem, with their causative agents appearing as new viruses and various representatives of microbes of the family Enterobacteriaceae (coliform bacteria, Providencia, Proteus Kleibsiella and others) and anaerobes, among which first place is occupied by Cl. perfringens.

The situation is especially complicated by the fact that the diseases occur in the form of mixed or associated infections. Among young agricultural animals, from 80 to 95 percent of all diseases marked by acute gastro-intestinal disorders are caused by a mixed infection or associations of microorganisms. At the present time, it has been proven that mixed infections occur most frequently as a result of the effects of viruses (erysipelas, corona, parvo and others) and stratified enteropathogenic coliform bacteria.

Associated infections appear as a result of dysbacteriosis, with microorganisms occurring in such associations in a manner such that one type of microbe or both mutually complement one another. During the carrying out of special tests, it was established that in sows having the syndrome mastitis-metritis-agalactia the infectious agent was an association of bacillus pyocyaneus and coliform bacillus, coliform bacillus and proteya and coliform bacillus and streptococcus. These associations act as a single infectious agent.

Environmental factors are included among the causes of new diseases. A complicated relationship exists between animals and plants and through them between man and the environment. One factor leading to the appearance of new diseases is the extensive use in agriculture of various chemical agents -- fertilizers, herbicides, insecticides and other preparations. Many of them are toxic; by contaminating the feed, they inevitably end up in the organism of an animal. Here they affect the metabolism of an animal and lower its immunological potential, that is, the ability to retain a resistance against microorganisms -- generally referred to as overall resistance. It has already been proven that many chemicals which earlier were used extensively in agriculture are harmful to animals and have been removed from production operations. Moreover, constant control must be exercised over those presently in use and their effects on animals thoroughly studied.

A very important problem is that concerned with the extensive use for prophylactic and treatment purposes of antibiotics and other medicinal

preparations characterized by immuno-depressant activity -- which suppress phagocytosis, the output of antibodies and which cause destructive changes in lymphoid tissue. It has been proven that such antibiotics as levomycetin, streptomycin and penicillin summon forth an immuno-depressant reaction in an organism. Similar reactions are produced by certain toxic chemicals which are utilized on an extensive scale -- chlorophos, metaphos and many others. A weakening of the immuno-biological reactions in an organism lead to the appearance of allergies, infectious diseases and other pathologies.

For the normal life of an animal, special importance is attached to the presence in the intestine of microflora, including quasi-pathogenic microflora, which participate actively in the digestive process, ensure a synthesis of many vitamins and ferments and protects the animal organism against the effects of many strictly pathogenic microorganisms. For example, coliform bacteria -- a constant inhabitant of the intestine of all warm-blooded animals -- is a biologically active microbe which under normal conditions lives as a symbiont, participates in the synthesis of many vitamins and ferments and is an antagonist of the causative agents of a number of diseases (56). Thus the usual intestinal microflora is phylogenitically adapted to an animal organism and is in a state of equilibrium with it, performing a protective function in the process. A disruption in the balance in this equilibrium and a reduction in the resistance of the organism lead to the appearance of sharp antagonistic relationships, a situation is created which promotes the propagation of potentially pathogenic microorganisms and conditions appear for a genetic exchange between the representatives of microbe associations. Some factors of pathogenicity are controlled by transmissive episomes and are transferred from one type of microbe to another.

Hence, changes in the infection pathology for animals, under the conditions imposed by industrial animal husbandry operations, are conditioned on the one hand by a reduction in the overall resistance of the animal organism and, on the other, by a disruption in the ecological balance between a macro-organism and its microflora which, owing to existing conditions, changes its properties and acquires new ones from other types of pathogenic micro-organisms by means of an episome transfer.

The creation of animal husbandry farms of the industrial type has fluctuated and for all practical purposes has refuted the Kokh Triad: a changed type of triad "host -- environment -- parasite" is in operation at these farms. Something similar happens in human society and thus representatives of the medical science have advanced this concept for the very first time. Many diseases which are recorded in industrial animal husbandry operations can in no way be associated with the Kokh Triad. A classical example of this is the group of respiratory infections found in cattle (50).

Thus, changes in the maintenance conditions for animals radically alter the nature of the diseases and therefore it follows that the system of measures for preventing and eliminating them must be quite different.

The entire technological cycle for animal husbandry farms operating on an industrial basis is aimed at protecting the animals against acute infectious diseases. The principal directions to be followed in carrying out this work are: strict control over formation of the herd and protecting the farms

from penetration from without by the causative agents of the diseases. Industrial farms are usually formed using animals obtained from farms which have not had acute infectious diseases for a period of not less than 2-3 years and in the case of chronic diseases such as tuberculosis and brucellosis -- not less than 5 years. When forming a herd, an attempt must always be made to ensure that the number of farm-suppliers, regardless of how satisfactory they are, is held to a minimum. Each farm has its "own" microflora parasitizing in the animals, including quasi-pathogenic microflora. The animals become adapted to it, that is, a definite equipibrium exists between the animal organism and the surrounding microbe world. When an animal is transferred to another farm, this balance is disrupted and, in addition, changes take place in the maintenance and feeding conditions. Hence a complex of factors leading to the development of dysbacteriosis and infection takes shape. This can be avoided by placing the animals obtained from one farm-supplier in the same facility. If the cattle are obtained from various farms, then they should be placed in the farm's facility at one and the same time and with a minimum disruption in time, so as to ensure that all of the animals are subjected to the same conditions.

Special importance is attached to ensuring that all of the animals imported have the same immunity background, that is, on all of the farm-suppliers, regardless of the epizootic status of a particular farm, the same veterinary treatments, especially vaccinations, must be carried out.

The protection of industrial type farms from penetration from without by the causative agents of infection is carried out by means of veterinary-sanitary barriers. The transmitters of the causative agents can be feed, transport, or other types of animals, especially rodents or wild birds. All of this must be borne in mind by the farm leaders and specialists. Strict observance of the required technology is an indispensable law of farms of the industrial type.

Man can be both a source and a transmitter for the causative agent of an infection. Recently, both abroad and in our country, a study of livestock has revealed an increase in the carriers of salmonella in them. In the process, certain variants of salmonella are being isolated that cause illness in man. The spread of such variants of salmonella poses great danger particularly to humans. Human bacilli carriers can be a source for the causative agent for the infection in animals and, as a result, the closed "animal - human" circle is created. Thus the service personnel of farms must be held under constant medical control (required especially for carrying out checks for tuberculosis and carriers of salmonella).

All workers on industrial farms must not have animals on their private plots, or at least those types with which they work. Many cases have been recorded of diseases occurring on individual farms, with the causative agents for these diseases subsequently being brought onto the public farms by the owners of these animals, thus causing a great amount of harm to the farm.

In a production zone, all workers on a farm must pass through a sanitary check poin and undergo a complete change of clothing and mandatory washing of the hands using disinfecting solutions. Allowing strangers to visit a farm should be eliminated entirely or limited to the maximum possible degree. All

persons coming on to the farm must pass through the sanitary check point and undergo a change of clothing. A complex of these measures provides a certain degree of security for a farm in terms of acute infectious diseases and yet it does not eliminate entirely the possibility of such diseases occurring. As already mentioned above, among the microflora parasitizing in the organism of an animal there is always a quasi-pathogenic one which, under definite circumstances, is capable of causing a flare-up of infectious diseases. A principal and very difficult task in industrial animal husbandry is that of preventing such diseases.

The principal cause of an outbreak of infectious diseases, with no causative agents penetrating from without, is a disruption of the equilibrium between animals and the external environment. There are many reasons for such disruptions in equilibrium and it is practically impossible to foresee and eliminate all of them. Thus a requirement exists for uncovering such unfavorable effects on an animal organism by exercising control over their condition. A criterion for the condition of an organism is its metabolism level. Control over the condition of animals, using the dispensary system method, was developed for the very first time by a group of Soviet scientist-therapeutists headed by Professor I.G. Sharabrin, for the purpose of preventing infectious diseases. At the present time, the principal measure being employed in industrial animal husbandry operations for preventing all diseases, including infectious ones, is the dispensary system.

Any disruption in equilibrium between animals and their external environment leads to a reduction in the resistance of the organism and to a disruption in the balance between them and the microbe world -- dysbacteriosis and infections (54, 57-63).

Upon uncovering metabolic disturbances, it is easy to establish the reasons for their appearance and to eliminate them. Thus the appearance of diseases can be prevented.

Another basically new element concerned with preventive measures -- a complex of veterinary-sanitary measures. At animal husbandry farms which operate on an industrial basis, special importance is attached to ensuring that micro-organisms are not allowed to accumulate in the environment. This is achieved through periodic sanitizing of the facilities and carrying out aerosol disinfection in the presence of the animals.

The technological principle "everything is empty -- everything is occupied," that is, simultaneous filling up of the facilities with animals and simultaneous emptying of them is being employed on all farms of the industrial type. Following release of the animals, complete sanitation work must be carried out in the facility vacated. For the best removal of the farmyard manure, the washing should ideally be carried out using a 0.5 percent alkaline solution. Thereafter, current repair operations are carried out. Following the completion of the repair work, disinfection is carried out using the aerosol or mixed method: initially the floors and feeding troughs are treated using a hot caustic solution and thereafter, once they have dried out, aerosol disinfection is carried out throughout the entire facility. Following disinfection, bacteriological control over its quality is mandatory in all instances.

The facility should be dried out and ventilated over a period of 3 days. Experience has underscored the extreme need for such a time-lag for facilities treated in this manner.

Disinfection in the presence of the animals is carried out in keeping with the readings and taking into account the type of animals and their maintenance conditions. An urgent need for such disinfection arises in connection with the appearance of respiratory diseases.

Special preparations are employed for the aerosol disinfection in the presence of the animals and the plans for their use must be followed in a very strict manner.

A very important problem is that having to do with the chemical prophylaxis and vaccination of animals. In the case of industrial animal husbandry, especially in poultry and swine raising, use is being made in all reas, for the purpose of chemical prophylaxis, of various premixes and colistopes, the structure of which includes salts, vitamins and antibacterial preparations in weak or moderate dosages. These means have fully proven their work in terms of the production indicators. However, in addition to these preparations, use is made at times of antibiotics for prophylactic purposes. At the present time, the inadvisability of employing this measure has been proven, since antibiotics exert an immuno-depressant effect on an organism and lead to the appearance of strains of microorganisms which are resistant to them.

Specific prophylaxis in the form of vaccinations and the use of globulins and serums constitute an undesirable measure and one which should be carried out only in the event of extreme need.

However, notwithstanding the entire technological process and the veterinary-sanitary measures which reliably protect a complex from penetration by the causative agents of infectious diseases, success has still not been achieved in eliminating prophylactic vaccinations entirely.

In examining the problem of immuno-prophylaxis and the tasks confronting it, one should first of all recall the need for shortening the periods for the inductive phase and for the rapid onset of the reproductive phase, that is, the period between the innoculation and the onset of immunity must be brief (64-66). Post-vaccination complications occur according to the type of non-infectious or infectious allergy and are conditioned by the para-allergic processes, clinical manifestations and hyper-sensitivity of the animals innoculated and also by the possibility of the development of a "disease of immune complexes" and by the toxic effect on the organism. In addition to the unfavorable effect on the organism, the tense nature of the immunity lowers the organism's overall resistance and reaction capability.

In order to achieve success in carrying out vaccine prophylaxis, exceptional importance is attached to observing the schedules and rules established for introducing a vaccine into an organism. Thus the order and periods for the repeated introduction of vaccines -- "the rule of intervals" -- must be observed in a strict manner. The administration of an antigen is followed by the phase of redistribution of immuno-competent cells -- they become refracting and require a definite period for their restoration.

Tense immunity in an organism occurs only when there is sufficient strength in the first immunizing dosage. If the antigen dosage is insufficient, then the immune reaction will be weak and such an organism will respond only weakly to revaccination.

With the repeated administration of an antigen, against a background of intensive output of antibodies, a fixation of the antigen by the antibodies occurs and the antigen is rapidly removed from the organism, such that an additional increase in the tense nature of the immunity is not observed. This should be borne in mind in particular when scheduling innoculations involving related antibodies. They should be carried out simultaneously. In the case of individual vaccinations, there should be considerable pauses in view of the fact that the antigen can be eliminated by the antibodies.

The immunological reaction is suppressed during revaccination and the administering of large dosages of an antigen or repeated injections of it.

The following important practical considerations derive from the theoretical positions mentioned above:

...on the day of the innoculations, that is, at the beginning of the inductive phase, all unfavorable and strange effects on the organism of the animal to be vaccinated should be eliminated. This will create a favorable background for the immunity response and it will not suppress immunogenesis;

...upon obtaining the vaccines, it should be borne in mind that the tense nature of the immunity can be raised by adding substances which raise the synthesis of the protein;

...upon obtaining associated vaccines, it will be necessary to combine correctly the antigens included in them. For example, polysaccharides and proteins arouse a mutual stimulation of antibody synthesis and, conversely, the combining of several polysaccharides leads to the reverse effect; there will be no immunity and complications may arise;

...more associated vaccines are required in order to reduce the number of successive vaccinations, since they can lower the immunity;

...special importance is attached to having a correct program for innoculations. For example, young pigs obtained from sows which were vaccinated against the Auyeski disease and which received kolostral immunity during the 1st or 2d days of their lives should not be parenterally vaccinated (67-68).

The number of vaccines is increasing with each passing year. The young stock are having to sustain an especially heavy "vaccine workload." This leads to the appearance in the animals of strong stresses, since in addition to the immunogenetic complex the vaccines contain a large number of alien components which arouse certain reactions in an organism and quite frequently -- allergies.

The extensive use of live virus vaccines creates the threat of contamination by latent viruses; the vaccine strains of viruses can stimulate a "dormant"

infection in an organism, bring about an increase in the permeability of the blood-brain barrier or provoke the development of allergic encephalitis, which is frequently observed in calves.

Observations which we carried out over a period of many years on the epizootic centers of infection for the Auyeski disease, swine fever and hoof and mouth disease provide the basis for the assumption that the use of live virus vaccines in all probability creates the conditions required for the circulation of the field strains of causative agents for virus diseases. Thus live, and especailly anti-virus vaccines, have very substantial shortcomings. Many scientists generally oppose their use and in fact many countries forbid the use of live vaccines for combating individual diseases. However, it is hardly possible to reject the use of live vaccines completely, since in the case of a number of infections it is known that dead vaccines are useless and cannot ensure protection for an organism against infection and disease (50).

Immuno-prophylaxis of infectious diseases has played an exceptional role in the elimination of epidemic and epizootic diseases (69). In animal husbandry, its importance is increasing many times over at the present time. The concentration of animals at small sites and concentrations of large numbers of animals on farms are creating a potential threat with regard to an outbreak of epizooty and thus a requirement exists for organizing a more efficient system of prophylactic measures. This requires the following:

...carry out vaccinations as a forced measure only in those instances where they are needed. Practical veterinary work requires the development of recommendations which will define the need or feasibility of vaccinations and forecasts for infections;

...improve the quality of the vaccines and increase the number of associated vaccines;

...develop more efficient vaccination systems for the various types of farms and types of animals;

...an especially important problem is that of preventing infectious diseases in young stock with acute gastro-intestinal disorders or respiratory diseases.

The principal program has been defined for immunity prophylaxis for these diseases; it includes the immunization of pregnant animals and also newly born animals using passive preparations -- immunity globulins and serums, the creation of a local immunity by means of oral or aerosol immunization and improvements in the overall resistance of an organism of an animal through the use of vitamins, antibiotics and microbe preparations.

Although the mentioned program has fully proven its worth, it nevertheless contains some flaws. For example, the question concerning the periods and repetitions for immunizing mothers remains controversial and also many other positions for which there are different understandings in operational practice.

A solution must also be found for a problem that greatly disturbs the production workers -- what is the basis for terminating a vaccination being

employed on a farm on the basis of other indicators? The termination of vaccinations is often accompanied by epizooty relapses and thus, once a vaccination has commenced it should be carried out continuously on a farm. Thus the number of innoculations is constantly increasing. For example, on some farms young pigs less than 3 months of age are inoculated up to 16 times. And even in these instances the possibility of additional vaccinations does not disappear, although the possibility of this happening is very slight.

Thus the vaccination regimes and the readings for carrying them out and for discontinuing them must be defined more clearly for each infection.

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LIVESTOCK

INADEQUATE TECHNICAL SUPPORT FOR UZBEK LIVESTOCK OPERATIONS

Tashkent PRAVDA VOSTOKA in Russian 7 Jan 84 p 3

[Article: "Mechanisms are Inoperable, Farms are Not Put Into Operation"]

[Text] An examination showed that the subdivisions of Goskomsel'khoztekhnika [State Committee of the Agricultural Equipment Association] and the republic's ministries of agriculture and the fruit and vegetable industries are demonstrating inadequate concern regarding increasing the effectiveness of livestock raising. The mechanization level of labor-consuming processes in this branch is low and the proportion of manual labor is high. This is the case in Kara-Kalpak ASSR and Bukhara, Kashka-Darya and Surkhan-Darya oblasts. In many enterprises of the aforementioned autonomous republic and oblasts almost half of the cows are milked by hand.

Some kolkhozes and sovkhozes have not prepared farms for winter, have not stored sufficient feed and utilize the feed inefficiently.

The resources allocated for renovating and technically reequipping farms are inadequate.

The enterprises of Goskomsel'khoztekhnika are not fulfilling established tasks related to the mechanization of farms and to technically servicing them. The work that is done is poor quality; additions and falsifications of figures are made. The unhappy result is that during the winter period 380 feed shops and feed kitchens, 400 feed distributors and transporters and over 200 milking units as well as many other mechanisms do not operate in kolkhozes and sovkhozes.

The republic's ministry of rural construction and the Uzkolkhozstroy [Uzbek Kolkhoz Building] Association are late with the operational start of livestock facilities. In nine sovkhozes of Navoi Oblast in a period of 9 months the volume of building-installation work on livestock raising complexes was fulfilled by only 45 percent of the annual plan and nine feed shops were not put into operation.

All of this has played a part in the fact that a large number of enterprises do not fulfill plans for the production and procurement of meat and milk. During 9 months of last year 283 kolkhozes and sovkhozes underproduced

14,500 tons of meat that was to be procured and 600 enterprises underproduced 35,000 tons of milk. The cost of a quintal of weight gain in the livestock of Kara-Kalpak ASSR and Syr-Darya and Kashka-Darya oblasts exceeded the planned costs by a factor of 1.5-2.

The committee instructed the deputy chairman of Goskomsel'khoztekhnika in the republic, Comrade Khakomov and the deputy ministers of agriculture and the fruit and vegetable industries, Comrades Bogma and Niyazmetov, to examine the weakened controls over the development of mechanization, strengthening the material and technical base and increasing the effectiveness of livestock farming which resulted in numerous instances of mismanagement and lack of discipline and a general lack of preparation of enterprises for the over-wintering of cattle.

The Deputy Minister of Rural Construction of the Uzbek SSR, Comrade Kireyev and the deputy chairman of the Uzkolkhozstroy association, Comrade Kamalov, were rebuked for not demonstrating concern about the timely introduction into operation of livestock facilities and for not reacting to the numerous constructional defects and other defects in building.

The republic committee attested that the materials of the investigation will be examined by oblast and rayon committees of people's control, that measures will be taken to eliminate shortcomings and violations and that the guilty parties will be disciplined and held materially responsible.

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AGRO-ECONOMICS AND ORGANIZATION

NEW ADMINISTRATIVE STRUCTURE FOR GEORGIAN APK SPELLED OUT

Conference Discusses Reorganization

Tbilisi ZARYA VOSTOKA in Russian 5 Jan 84 pp 1-2

/Article: "The Agroindustrial Complex: A New Stage"/

> /Text/ "A positive grade has been assigned to the work performed by the Central Committee of the Communist Party of Georgia in developing and introducing effective methods for administering the agroindustrial complex at the rayon and republic levels." (From the decree of the CPSU Central Committee entitled "Work of the Central Committee of the Communist Party of Georgia in Improving the System of Administration, Raising the Level of Economic Work and Improving the Efficient Use of Resrouces).

The combining of agricultural production ministries and departments -- integration at the republic level, implemented 1 year ago in Georgia, has raised the need for further improving administration mainly at the rayon level of the agroindustrial complex.

The participants at a conference held in the city of Gori discussed a broad range of problems associated with the structural reorganization of RAPO /rayon agroindustrial association/ and the formation of state committees for agricultural production in the Abkhaz ASSR and the Adzhar ASSR.

Leading party, soviet and economic workers, the representatives of all services of the agroindustrial complex, the chairmen of a number of kolkhozes, the directors of sovkhozes and scientists participated in the work of this conference.

The conference was opened by secretary to the Central Committee of the Communist Party of Georgia D. Patiashvili.

Information was provided by the chairman of the State Committee for Agricultural Production for the Georgian SSR G. Mgeladze.

Five rayons considered to be most suitable for the new conditions and very typical in terms of their natural-economic conditions -- Goriyskiy,

Gurdzhaanskiy, Makharadzevskiy, Gegechkorskiy and Adigenskiy -- were selected as models for working out the structure for the rayon agroindustrial association.

The models for a RAPO staff administration, as recommended for examination by the State Committee for Agricultural Production of the Georgian SSR, conform fully to the state committee's structure, with the branch and territorial principles of administration being observed in them. Moreover, it is emphasized that the classification of rayons selected as being typical is rather standard: during a detailed working up of the structure, staffs and funds required for maintaining each RAPO, the local economic and zonal conditions must be taken into account in an extremely thorough manner. Thus, following the working up of the basic problems in the State Committee for Agricultural Production, a special committee will be created for forming the staffs for new agroindustrial associations in each rayon. This work must be completed prior to the end of February this year.

In turn, the reorganization of the rayon level for the administration of agricultural production raises the need for improving the direct administration of production subunits -- kolkhozes, sovkhozes, inter-farm enterprises, poultry farms and livestock complexes.

The goal of this large-scale and complicated work consists of completing, during the 11th Five-Year Plan, the development of a well organized economic mechanism which will make it possible to utilize more completely the opportunities afforded by the socialist economy. The decisions handed down during the December (1983) Plenum of the CPSU Central Committee are aimed precisely at achieving this goal.

Many years of experience have shown that during the course of producing agricultural products the sphere of services has remained beyond the control of the production sphere and its activities have not been coordinated with the final results. The merging of the principal and service branches, which are directly associated with agri ltural production, is making it possible to create a model for the rayon level that eliminates use of a departmental approach, parallelism and work uplication. In addition, it is bringing together the interests of all of the production and service elements and directing them towards achieving high final results.

As a result of improvements in the existing RAPO structure, the number of administrative personnel is being reduced considerably. Moreover, the simplification of this structure is not bringing about a deterioration in branch administration but rather it is improving it and making it more efficient. The reduction in RAPO administrative personnel throughout the republic as a whole will make it possible to release hundreds of staff units and this in turn will make it possible to transfer a large number of skilled specialists from the administrative sphere directly into production operations.

But this is only one aspect of the problem. Another and equally important one lies in the fact that, distinct from the present administrative system, independent functional organs of the engineering services are eliminated in the proposed model, with appropriate structural subunits being created in their

stead within the RAPO staff. Thus the implementation of a uniform technical policy for the rayon level is ensured.

The new structural models for administering agricultural production at the rayon level and in autonomous republics were approved mainly by the leaders of the APK in those regions which were selected as being typical. In the process, the Minister of Agriculture for the Abkhaz ASSR V. Andribava, the chairmen of the Gurdzhaanskiy, Goriyskiy, Makharadzevskiy and Gegechkorskiy RAPO's T. Dvalishvili, V. Khutsishvili, N. Takidze and R. Ubilava, the manager of the Gurdzhaanskiy Rayon Association of Sel'khoztekhnika D. Rostoshvili and the chief of administration for land reclamation and wager management in Adigenskiy Rayon G. Grigoliya, during the course of a discussion, expressed a number of comments and proposals which will be taken into account during the final preparation of the new program.

Naturally, each innovation raises new problems and requires a unique psychological reorganization and an examination of the usual approach employed for the particular phenomena and facts involved. This is why the solutions for vital tasks -- improving logistical supply for agriculture, motor transport operations and the organization of equipment repair work and other services providing vital support for the branch -- require the use of a comprehensive and genuinely state party approach. Increased attention was focused on this problem by the 1st secretary of the Khobskiy Rayon Party Committee N. Nadaraya, the chairmen of the Zugdidskiy and Lanchkhutskiy RAPO's M. Demuriya and A. Darchiya, the chairman of a kolkhoz in the village of Natanebi in Makharadzevskiy Rayon G. Tsitlidze and by the chairman of the Kolkhoz imeni Kalinin in the city of Lagodekhi E. Dukmasov.

At the same time, it was emphasized during the conference that the new stage in further improving the administration of agricultural production requires the taking into account of a whole series of circumstances, in accordance with the decisions handed down during the December (1983) Plenum of the CPSU Central Committee and the decrees of the party concerning our republic. This applies first of all to strengthening the economic services of the RAPO's, introducing progressive forms for organization and wages, accelerating scientific-technical progress and making extensive use of automatic systems for control and dispatching in the various branches of agriculture. Emphasis was placed upon the need for employing a more thorough approach for the problem of mutual relationships between dual subordination enterprises with the RAPO's and partners in the agroindustrial complex. A more clear-cut definition is required concerning the role and place of inter-farm construction organizations in connection with the functioning of agroindustrial associations.

The participants in the conference devoted special attention to the problem of selecting, placing, training and improving the skills of personnel assigned to the agroindustrial complex at all of its levels.

During the conference a decision was handed down calling for the draft statute governing a rayon agroindustrial association and also the standard plans for administering RAPO's to be published in the press and also for them to be discussed on an extensive scale.

It is noted that the high grade assigned to the work of the republic's agroindustrial complex, especially during the past weather-complicated year, obligates all of the agricultural workers during the fourth year of the five-year plan, to work in a more organized manner so as to make their own contribution towards the republic's initiative aimed at raising labor productivity and lowering production costs.

Speeches were delivered during the conference by the deputy chairman of the Council of Ministers for the Georgian SSR O. Vardzelashvili and the Minister of Finances for the Georgian SSR D. Dvalishvili.

A lengthy speech was delivered during the conference by Candidate Member of the Politburo of the CPSU Central Committee and 1st Secretary of the Central Committee of the Communist Party of Georgia E.A. Shevardnadze.

The chairman of the Council of Ministers for the Georgian SSR D. Kartbelishvili, the 1st Secreatry of the South Ossetian Oblast Committee of the Communist Party of Georgia F. Sanakoyev and department heads of the Central Committee of the Communist Party of Georgia L. Zakaidze and G. Mamatsashvili participated in the work of the conference.

Terms of RAPO Statute

Tbilisi ZARYA VOSTOKA in Russian 24 Jan 84 pp 2-3

/Draft statute governing a rayon agroindustrial association in the Georgian SSR/

/Text/ New stage in further improving the administration of rayon agroindustrial associations.

As is known, the February (1983) decree of the CPSU Central Committee and the USSR Council of Ministers authorized the Central Committee of the Communist Party of Georgia to continue the experiment concerned with improving the administration of the agroindustrial complex.

This same decree, based upon the republic's ministries for agriculture and land reclamation and water resources and Gruzgoskomsel'khoztekhnika, created the State Committee for Agricultural Production of the Georgian SSR.

As a result of integration carried out at the republic level, a need has also arisen for further improving the administration for the chief element of the agroindustrial complex -- rayon agroindustrial associations and having them conform to the structure of the state committee.

A conference was recently held in Gori during which the participants discussed the problems concerned with improving the administrative structure for rayon agroindustrial associations and the draft for an appropriate statute.

In view of the fact that the Central Committee of the Communist Party of Georgia and the republic's Council of Ministers are attaching special importance to improving the rayon agroindustrial level, a decision was handed down during the conference to publicize in the press the draft statute for a rayon agroindustrial association and the structural plan for the administrative staff of the association, in the interest of achieving a general discussion of the problem.

The Central Committee of the Communist Party of Georgia considers it necessary for the oblast and rayon (municipal) party committees, the councils of ministers of autonomous republics, the executive committees of rayon soviets of people's deputies, rayon agroindustrial associations, kolkhozes, sovkhozes, enterprises and organizations which provide services for agriculture, the party, professional trade union and komsomol aktivs of the agroindustrial complex and agricultural specialists to participate actively in discussing the published documents and, within a 2 week period, to present their recommendations to the State Committee for Agricultural Production of the Georgian SSR.

Statute Governing a Rayon Agroindustrial Association in the Georgian SSR

I. General Conditions.

1. A rayon agroindustrial association is formed in the interest of improving the administration of agriculture and other branches of the agroindustrial complex in a rayon, based upon improvements in the economic independence and initiative of the kolkhozes and other enterprises and organizations included in the association's structure, coordinating their activities, mobilizing the efforts aimed at successfully carrying out the Food Program for the USSR and the Georgian SSR, achieving more complete use of the production-economic potential and resources, realizing steady growth in the production volumes and in improving the quality of the agricultural products and achieving a high level of efficiency for the branches of the complex.

2. A rayon agroindustrial association is created on the basis of a decision handed down by the executive committee of a rayon soviet of people's deputies. The decision with regard to the formation of an association is approved by the rayon soviet of people's deputies.

An association's structure includes the following on a voluntary basis: kolkhozes, sovkhozes, inter-farm enterprises (organizations), services for mechanization, electrification, the use of chemical processes, land reclamation and water resources, other enterprises and organizations of the State Committee for Agricultural Production of the GSSR, the GSSR Ministry of the Fruit and Vegetable Industry, the GSSR Ministry of Procurements, the GSSR Ministry of the Meat and Dairy Industry, the GSSR Ministry of the Food Industry, the GSSR Ministry of Rural Construction, the GSSR Ministry of Forestry, the GSSR State Committee for the Wine Making Industry, the GSSR State Committee for the Tea Industry, the republic's Tsekavshiri Consumer Cooperative, the Georgian

Gruzefiromasloprom Agroindustrial Association and the Georgian Gruzrybprom Production Association of the fishing industry.

Enterprises and organizations which provide services for several rayons can be included in an association's structure by agreement with the appropriate higher organs.

Enterprises and organizations of other ministries and departments, the activities of which are associated with the production, procurements, processing and sale of agricultural products, are included in an association's structure by agreement with higher branch organs.

Enterprises and organizations included in the structure of an agroindustrial association retain their administrative independence, the rights of a legal entity and their departmental subordination. In carrying out their work they are guided by the statutes approved for them, the regulations and other normative documents and also by the present statute.

The higher organs of enterprises of dual subordination are obligated to solve the problems associated with the interests of an agroindustrial complex, but only with the consent of the rayon agroindustrial association.

3. The chief tasks of a rayon agroindustrial association are:

-- achieving proportional and balanced development for the enterprises and organizations included in an association's structure, for the purpose of increasing the production of food goods, ensuring fulfillment of the state plans by all enterprises of the agroindustrial complex and raising production efficiency and the quality of the work being carried out;

-- ensuring highly productive utilization of lands and raising their fertility, introducing scientifically sound and more effective methods for farm management and converting the production of goods over to an industrial technology;

-- creating a strong feed base for animal husbandry and consistently converting over to the use of intensive methods for managing this branch and raising the productivity of the livestock and poultry;

-- drawing unused lands into agricultural production, effective use of organic and mineral fertilizers and plant protective agents, carrying out a complex of measures associated with the reclamation of lands, combating soil erosion, protecting the environment and utilizing natural resources in an efficient manner;

-- ensuring efficient use of all capital investments and logistical, labor, financial and other resources made available, based upon the need for concentrating them in the more important sectors and overcoming "bottlenecks" and disproportions;

-- improving the services for kolkhozes, sovkhozes and other production enterprises and strengthening their logistical bases;

-- transforming the rural populated points into well organized settlements, creating a modern social infrastructure in the rural areas, particularly an expansion in the construction of roads through the joint efforts of enterprises and organizations included in the association's structure;

-- improving those administrative and inter-branch relationships which promote organizational-economic unity within the agroindustrial complex and orienting the work of enterprises and organizations included in an association's structure towards the final results of agricultural production;

-- creating stable economic conditions for the cost accounting activity of each labor collective, raising responsibility for the profitable management of production and introducing efficient forms for organization, the setting of norms and wages and for issuing material and moral incentives;

-- achieving economically sound production specialization and concentration and developing inter-farm cooperation and agroindustrial integration aimed at the efficient use of material, financial and labor resources;

-- organizing the development and practical implementation of comprehensive inter-branch programs for the extensive introduction of scientific achievements and leading experience and introducing progressive and basically new resource-conserving technologies which serve to raise labor productivity and production efficiency;

-- implementing measures aimed at raising the efficiency of backward branches production efforts and enterprises and smoothing out the economic conditions of management;

-- preventing losses and ensuring the safeguarding of agricultural products during all stages in the technological cycle for their production, procurements, transporting, processing, storage and sale;

-- organizing the drawing up of contractual agreements for agricultural products and also other administrative agreements and intensifying their role and importance as legal means for ensuring fulfillment of the state plans for procurements and other planned tasks;

-- implementing measures for further developing the private plots of citizens and the subsidiary farms of enterprises and organizations, as a component part of the country's food complex and also for developing subsidiary enterprises and trades at the kolkhozes and sovkhozes;

-- creating a system of information-computer services for enterprises and organizations included in the structure of an association, based upon a common network of EVM's /electronic computers/ for collective use and the extensive introduction of automatic systems and economic-mathematical control methods;

-- maximum development of the socialist competition for achieving high production-economic work indicators and achieving maximum participation by workers in production management;

-- ensuring the observance of socialist law in economic relatioships and implementing measures aimed at improving legal work at enterprises and organizations included in an association's structure.

4. A rayon agroindustrial association, using property assigned to its operational control, carries out its work in conformity with a plan, carries out the obligations entrusted to it, accepts responsibility and takes advantage of the rights associated with this activity, has an independent balance and is a legal entity.

5. A rayon agroindustrial association is subordinated in its activity to a rayon soviet of people's deputies, to its executive committee and to the State Committee for Agricultural Production of the Georgian SSR within the limits of its competence and the Bolinsskiy, Gardabanskiy, Marneulskiy and Mtskhetskiy rayon agroindustrial associations -- to the Ministry of the Fruit and Vegetable Industry within the limits of its competence.

Rayon agroindustrial associations located in the Abkhaz ASSR, the Adzhar ASSR and the South Ossetian Autonomous Oblast are subordinate in their activities to the corresponding rayon soviets of people's deputies, to their executive committees, to the state committees for agricultural production of the Abkhaz ASSR and the Adzhar ASSR and to the Agricultural Administration for the South Ossetian Autonomous Oblast.

6. In carrying out its work, a rayon agroindustrial association is guided by the legislation of the USSR and the Georgian SSR and also by the statute for the particular rayon association, developed taking into account the specific peculiarities of this association based upon the present statute and approved by the executive committee of the rayon soviet of people's deputies, with social law and state discipline being observed in a very strict manner.

II. Management of a Rayon Agroindustrial Association

7. The management of a rayon agroindustrial association is carried out by the association's council. The association's council is the highest organ of administration for the association.

An association's council is formed in conformity with the established system, at a session of the rayon soviet of people's deputies and upon presentation of its executive committee.

The council of a rayon agroindustrial association is, within the limits of its competence, an organ of state administration.

8. The structure of a council for a rayon agroindustrial association includes a chairman of the agroindustrial association, his 1st deputy (deputy), kolkhoz chairmen and sovkhoz directors, the leaders of enterprises and organizations of other branches of the agroindustrial complex and representatives of appropriate social organizations.

The size and personnel structure of a council for an association, in each specific instance, is approved or changed by the rayon soviet of people's

deputies. Ideally, the chairmen of kolkhozes and the directors of sovkhozes should constitute a majority in the structure for a council.

9. The council of a rayon agroindustrial association:

-- determines the number of members in an association's administration and selects its staff for a period of 3 years; the chairmen of kolkhozes and the directors of sovkhozes must constitute a majority in the administration's structure;

-- approves measures for implementing production specialization, concentration and cooperation within the association;

-- defines the plans for state procurements of agricultural products for the kolkhozes, sovkhozes and other agricultural enterprises included in the structure of the association;

-- examines and approves the long-range and annual plans for development of the association;

-- examines the draft plans for the economic and social development of a rayon's agroindustrial complex and the distribution of construction of new installations for processing and other enterprises and the modernization of existing installations;

-- with the consent of enterprises and organizations included in the association's structure, solves problems concerned with the centralized carrying out of individual production-administrative functions within the association;

-- examines the results of fulfillment of production-financial plans by enterprises and organizations included in the association's structure;

-- achieves improvements in the forms and systems for introducing scientific organization for labor and production, administration, cost accounting, the setting of norms and wages and material and moral incentives;

-- examines problems concerned with organizing and developing a socialist competition and studying and disseminating leading experience in the introduction of progressive forms and methods for raising the creative activity of workers;

-- makes decisions with regard to raising the effectiveness of capital investments, reducing the periods and costs for construction and mastering planned capabilities;

-- approves the structure and official personnel strength for the administrative staff and the estimates for maintaining it.

The council of an association can examine and solve other vexing problems concerned with the work of the association, problems arising from the specific conditions found in the rayon.

10. The council of a rayon agroindustrial association convenes when necessary, but no less often than once each quarter. The meetings of a council are considered to be official when no less than three fourths of its staff is present. The decisions handed down by the council on matters falling within its competence are adopted on the basis of a simple majority showing of hands and are considered to be mandatory for all enterprises and organizations included in the association's structure.

11. The administration of a rayon agroindustrial association:

-- is a control-executive organ of administration;

-- examines the draft production-financial plans, the capital investment plans of enterprises and organizations included in the association, the long-range and annual plans of the association itself and also the estimates for maintaining the administrative staff and presents its recommendations to the council for approval;

-- examines and approves the production-financial plans of kolkhozes, sovkhozes, inter-farm enterprises and other enterprises and organizations included in the system of the State Committee for Agricultural Production of the GSSR;

-- examines the draft production-financial plans of enterprises and organizations of dual subordination included in the association's structure and, when necessary, presents its recommendations to the appropriate higher organs. The higher ministries and departments examine these recommendations and introduce changes into the planned tasks provided by subordinate enterprises, while simultaneously issuing a report to the RAPO concerning such changes;

-- examines and approves the annual reports and balances of kolkhozes, sovkhozes, inter-farm enterprises and other enterprises and organizations within the system of the State Committee for Agricultural Production of the GSSR;

-- examines and approves an internal work routine similar to the routine in use at state enterprises and at organizations;

-- listens to reports delivered by the leaders of production subunits of enterprises and organizations belonging to an association, concerning the course of fulfillment of production-financial plans, individual tasks and measures and adopted decisions;

-- examines problems associated with the concluding and carrying out of economic agreements and also improving the quality of output at enterprises and organizations belonging to an association;

-- jointly with the local professional trade union committee, it solves problems concerned with the issuing of material and moral incentives to workers attached to the administrative staff of an association;

-- solves the problems concerned with labor organization and the observance and strengthening of planning, financial, technological and contractual discipline at enterprises and organizations belonging to the association;

-- examines the results of documentary audits and inspections carried out respectively at enterprises and at organizations of the GSSR State Committee for Agricultural Production and the GSSR Ministry of the Fruit and Vegetable Industry;

-- examines and approves measures for protecting public property and preventing losses and also measures aimed at preventing embezzlement and waste. In addition, it ensures the implementation of these measures at enterprises and organizations respectively of the GSSR State Committee for Agricultural Production and the GSSR Ministry of the Fruit and Vegetable Industry.

The administration of a rayon agroindustrial association examines all other problems not falling within the competence of the council and hands down appropriate solutions for them.

12. Meetings of the administration of a rayon agroindustrial association are convened when necessary, but no less often than once a month. A meeting is considered to be official for the solving of problems when no less than three fourths of its members are in attendance: decisions are adopted based upon a simple majority of votes.

13. The daily management of the work of a rayon agroindustrial association is carried out by the chairman of the association's council; he ensures fulfillment of the decisions handed down by the council and administration and he bears personal responsibility (within the limits of his competence) for the status of affairs and the work of the agroindustrial association, its council and administration.

The chairman of the association's council is the chairman of the administration and at the same time he is the 1st deputy chairman of the rayon executive committee.

Depending upon the specific peculiarities of each rayon, the leaders of those enterprises and organizations that provide services for agriculture and are included in the association's structure, can be assigned by the deputy chairman of the council on the basis of a decision handed down by the association's council.

14. The chairman of the council of a rayon agroindustrial association:

-- in conformity with existing legislation and the present statute, is responsible for the property and resources assigned to the association;

-- concludes contracts, opens up appropriate accounts for the association at institutes of USSR Gosbank (USSR Stroybank) and acts in conformity with the decisions adopted by the association's council;

-- represents the interests of the association at all enterprises, institutes and organizations and at organs of the court and arbitration; issues powers of attorney (including the right to transfer power of attorney);

-- within the limits of his competence, issues orders and directions (instructions) concerning the association;

-- established the competence and official duties of his deputies.

15. Inspections and audits of the work of a rayon agroindustrial association are carried out, within the limits of their competence, by the GSSR State Committee for Agricultural Production and the GSSR Ministry of the Fruit and Vegetable Industry and also by the organs of non-departmental control, in conformity with the functions assigned to them by existing legislation for controlling the work of enterprises and organizations.

16. The working staff of a rayon agroindustrial association is a detached administrative staff, the structure and official strength of which are approved upon presentation respectively by the GSSR State Committee for Agricultural Production, the GSSR Ministry of the Fruit and Vegetable Industry and the executive committee of the rayon soviet of people's deputies.

An administrative staff for a rayon agroindustrial association is created using the numbers and maximum appropriations for the maintenance of an administrative staff, as established for an association, enterprises and organizations belonging to the association and also kolkhoz resources allocated for these purposes.

Inter-farm legal groups (departments), inter-farm control-auditing groups (departments), capital construction groups and rayon inspectorates of Gossel'tekhnadzor dunction outside the administrative staff of a rayon agroindustrial association.

The maintenance of an administrative staff for a rayon agroindustrial association is carried out using withholdings from kolkhozes, sovkhozes, inter-farm enterprises and also other organizations and enterprises belonging to the association, in accordance with the statute on the formation of funds for the maintenance of a RAPO staff.

The maintenance of an administrative staff for rayon agroindustrial associations is carried out using state budgetary funds.

The maintenance of inter-farm legal groups (departments), inter-farm control-auditing groups (departments) and inter-farm groups (departments) for capital construction is carried out using withholdings from kolkhozes, sovkhozes and inter-farm enterprises serviced by them. The maintenance of rayon inspectorates of Gossel'tekhnadzor is carried out using state budgetary funds.

17. For the purpose of attracting workers on an extensive scale to participate in the preparation and discussion of recommendations on the economic and social development of a rayon agroindustrial association, studying the conditions for inter-branch production cooperation, concentration, specialization and its territorial distribution, the development of recommendations for the use and introduction into production operations at enterprises and organizations included in an association's structure of the latest scientific and engineering achievements, scientific labor organization and leading experience and also for the preliminary examination and skilled preparation of questions raised for discussion by the association's council, inter-branch committees for the production, procurements and processing of

products and for problems concerned with improving economic relationships, social problems associated with development of the rural areas and other matters can be created using skilled specialists, representatives of social organizations and leading production workers.

The structure for the committees and the statutes for them are approved by the association's council.

III. Rights and Obligations of a Rayon Agroindustrial Association

18. The rights and obligations of a rayon agroindustrial association are defined in the present statute, in other normative documents and also in the statute concerning a given association.

The rights and obligations of an association, as called for in the present statute, are carried out by the association's council and administration.

Rights and Obligations in the Sphere of Planning

19. The activities of a rayon agroindustrial association are organized based upon the consolidated five-year and annual plans developed by it for the economic and social development of the rayon's agroindustrial complex, including the principal indicators for the respective plans of kolkhozes, sovkhozes and other enterprises and organizations (regardless of their departmental affiliation) included in the association's structure and also indicators associated with solving common production socio-economic and cultural-domestic tasks for the rayon's agroindustrial complex as a whole.

The consolidated plan for the economic and social development of a rayon's agroindustrial complex is presented to the rayon soviet of people's deputies and to the higher organ of administration for the agroindustrial complex.

20. The rayon agroindustrial association, based upon the state purchase plan submitted to it in the established manner, develops draft plans for the sale of agricultural products to the state for the kolkhozes, sovkhozes and other agricultural enterprises and with their participation presents these plans for approval by the rayon soviet of people's deputies. The plans for the sale of agricultural products to the state, approved by the rayon soviet of people's deputies, are made available to the kolkhozes, sovkhozes and other agricultural enterprises and, in addition, the specialized farms of rayon subordination are furnished with plans for the sale of those types of products in which they specialize.

The plans for the sale of agricultural products to the state by specialized farms of republic and union subordination are developed and approved in the established manner.

21. A rayon agroindustrial association for kolkhozes, sovkhozes, services for mechanization, electrification, land reclamation and water management and also for other agricultural enterprises:

-- based upon the limits made available, taking into account the requirements of kolkhozes, sovkhozes and other agricultural services and enterprises and in coordination with the sources for financing, approves the distribution for capital investments (including construction-installation work) and the delivery

volumes for tractors, motor vehicles, tractor trailers, grain harvesting combines and other principal agricultural machines, fertilizers, chemical plant protective agents and also mixed feeds;

-- based upon the requirements of kolkhozes, sovkhozes and other agricultural enterprises, approves the volumes for production servicing work by mechanization, electrification, land reclamation and water management services;

-- distributes the delivery volumes for construction and other materials, for the carrying out of work using the economic method and also for repair-operational needs;

-- approves the distribution of limits for deliveries of petroleum products and other logistical resources, required for the fulfillment of plans;

-- defines the tasks for other plan indicators, subject to approval by the higher organs.

The capital investment plans, the limits for contractual operations, the plans for logistical support and the financial-economic indicators are made available to the farms simultaneously with the plans for the sale of agricultural products to the state.

22. A rayon agroindustrial association for enterprises and organizations of Gruzsel'khozkhimiya, which are included in an association's structure, examines and approves the consolidated plan for ag chemical services for agriculture in the rayon, which includes the delivery volume for mineral fertilizers, plant protective agents and other chemical products, the plans for delivering mineral fertilizers directly to the farms and the plans for carrying out agrochemical work in accordance with the established indicators and within the funds allocated and the established limits.

23. A rayon agroindustrial association for construction aquicultural organizations included in the structure of an oblast, republic (ASSR) or agroindustrial association:

-- examines the plan for aquicultural construction for kolkhozes, sovkhozes and other agricultural enterprises and organizations in the rayon and submits recommendations concerning it to the appropriate higher organs;

-- based upon plans for the comprehensive use and conservation of water, defines the aquicultural installations requiring planning and construction in the rayon, including technical improvements in existing land reclamation systems, and submits recommendations to the appropriate higher organs.

24. A rayon agroindustrial association for construction organizations (including inter-farm construction organizations) included in the structure of an association examines and approves the plans for contractual construction-installation work, to be carried out by these organizations for kolkhozes, sovkhozes and other agricultural enterprises and organizations included in the association's structure and provides the mentioned construction organizations with the tasks for placing fixed capital and production capabilities in operation.

25. A rayon agroindustrial association for enterprises and organizations which procure and process agricultural products and which are included in the association's structure:

-- examines recommendations concerning the draft plans for procuring agricultural products and their deliveries to the processing enterprises and organizations, the acceptance of products directly on the farms and defining the raw material suppliers in the raw material zones for the processing enterprises and assigning farms to them. This should be done taking into account the need for ensuring that the plants are provided with complete support in the form of agricultural raw materials in the required assortment and quality, that reductions take place in product losses and transport expenses and that the suppliers make their own recommendations to the executive committee of the rayon soviet of people's deputies;

-- examines the draft plans for the industrial processing of agricultural products (taking into account contractual agreements) at the production capabilities of enterprises for the processing of agricultural products, which are included in the association's structure, and also other planned indicators, based upon the specific conditions for specialization in the rayon and submits recommendations concerning these plans to the appropriate higher organs.

26. A rayon agroindustrial association also examines the draft plans for enterprises and organizations included in its structure which are not set forth in Points 20-25 of the present statute and submits recommendations concerning these plans to the appropriate higher organs.

27. A rayon agroindustrial association, based upon the recommendations of kolkhozes, sovkhozes and other enterprises and organizations included in its structure, develops long-range plans for specialization and the disposition of agricultural production, enterprises for the acceptance and processing of agricultural products, repair-technical workshops, bases for the storage of products and also plans for developing inter-farm cooperation and agroindustrial integration and organizes the carrying out of these plans.

Rights and Obligations in the Sphere of Inter-Branch Production-Economic Relationships.

28. A rayon agroindustrial association:

-- based upon the standard norms for estimates (rates) for services rendered or carried out by enterprises and organizations, regardless of their departmental affiliation, approves work within the association (with the exception of wholesale prices for the capital repair of equipment, the rates and estimates for transport shipments, construction-installation work and the price mark-ups for supply-marketing organizations, approved in the established manner), which ensures a reduction in prices for services rendered and work performed and improvements in the system of production services for kolkhozes and sovkhozes;

-- establishes the accounting prices for the livestock, feed, material and other resources supplied by the kolkhozes, sovkhozes and other agricultural enterprises and organizations included in the association's structure;

-- creates for the financing of measures associated with the solving of production, socio-economic and cultural-domestic tasks, for the association's enterprises and organizations on the whole, centralized funds for material incentives, for socio-cultural measures and housing construction and for the development of production and, based upon the appropriate normative documents, defines the system and order for their use;

-- in accordance with recommendations by kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure, centralizes the carrying out of individual production-farm functions (fattening of cattle, raising of heifers, production of mixed feed, repair and technical servicing of agricultural machines and the equipment of livestock farms, agrochemical services, capital construction and so forth). In the process, a decision concerning the centralization of individual production-farm functions, which involves the transferring of fixed productive capital (agricultural equipment, workshops for its repair and so forth), and the transfer of machine operators and other workers to enterprises of other ministries and departments, can be handed down by an association only with the consent of the interested kolkhozes, sovkhozes and other enterprises and organizations of the respective GSSR ministries and departments and the republic's kolkhoz council;

-- assigns the carrying out of centralized production-farm functions to individual enterprises and organizations regardless of their departmental subordination, or undertakes measures aimed at creating specialized subunits for this purpose based upon inter-farm cooperation;

-- undertakes measures aimed at strengthening the logistical base for agricultural procurements;

-- organizes the carrying out of tasks concerned with special-purpose, comprehensive scientific-technical programs and programs for solving important scientific-technical problems and tasks for the introduction into production operations of scientific-technical achievements and leading experience;

-- exercises control over the course of fulfillment of plans for the economic and social development of enterprises and organizations and over problems concerned with their joint activities;

-- listens to reports delivered by the leaders of enterprises and organizations belonging to the association concerning their fulfillment of the plans and tasks for the production, purchasing, acceptance, storage, shipping and processing of agricultural products and deliveries of machines, equipment, materials and spare parts, for the carrying out of all types of services for the farms and on other matters of joint activity, with appropriate decisions being handed down in this regard;

-- organizes control over the fulfillment of the decisions handed down and, when required, carries out in the prescribed manner an inspection of the activities of the enterprises and organizations included in the association's structure, examines the results of these inspections and hands down appropriate decisions concerning them;

-- organizes control over the accounts maintained between kolkhozes, sovkhozes and other enterprises and organizations engaged in the procurement, processing and storage of agricultural products and providing services for agriculture; exercises control over correct storage operations and the effectiveness of use of mineral fertilizers, equipment, feed, construction and fuel and lubricating materials, spare parts, packaging materials and other material resources.

Rights and Obligations in Connection With the Sale of Agricultural Products

29. A rayon agroindustrial association:

-- ensures the carrying out of plans provided to the farms for the sale of agricultural products to the state and also contractual agreements for these products; it assists in developing direct relationships between the kolkhozes, sovkhozes and other agricultural enterprises and organizations with industrial and trade enterprises, the conversion over to the acceptance of products by the procurement organizations directly on the farms and to shipping the products from the farms using transport equipment made available by the procurement specialists;

-- undertakes measures to ensure that all of the agricultural products scheduled for sale to the state by the kolkhozes and sovkhozes are accepted by the appropriate procurement and other organizations;

-- develops and implements a complex of measures aimed at raising the quality of the agricultural products being procured and processed.

Rights and Obligations in the Area of Capital Construction

30. A rayon agroindustrial association:

-- directs and coordinates the work of kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure, in the area of capital construction, being guided in the process by the plan for capital construction, developed in conformity with the consolidated plan for economic and social development of the rayon's agroindustrial complex;

-- examines draft five-year and annual plans for capital construction for enterprises and organizations included in the association's structure and submits recommendations for them to the appropriate higher branch organs;

-- by agreement with the appropriate higher branch organs, organizes cooperation in the use of capital investments for enterprises and organizations included in the association's structure, for the construction of installations of a production and non-production nature, with no change in the established plans for the placing in operation of production capabilities and fixed capital;

-- examines the recommendations of branch organs concerning the placement of construction installations in rayons, including newly built processing enterprises directly in their principal raw material zones and submits its own recommendations to the appropriate higher organs;

-- jointly with the higher branch organs, examines, examines the priorities for constructing individual installations of the agroindustrial complex, undertaking in the process measures aimed at preventing a dispersion of the forces and resources of the construction organizations among numerous installations and submits appropriate recommendations in the prescribed manner;

-- exercises control over the course of construction of installations within the association using the economic and contractual methods and, when necessary, furnishes assistance to the construction organizations in ensuring the placing in operation of the completed installations in keeping with the schedules called for in the plan;

-- when necessary, by agreement with the appropriate higher branch organs and based upon the results for fulfillment of the plans for the 1st through the 3d quarters of the current year, redistributes capital investments (including construction-installation work) not being used by individual state enterprises and organizations included in the association's structure, with no reduction taking place in the established plan for the placing in operation of production capabilities and fixed capital;

-- when necessary, centralizes the functions of client and technical supervision in construction for enterprises and organizations included in the association's structure.

Rights and Obligations in the Area of Logistical Supply

31. A rayon agroindustrial association:

-- exercises control over the organization of logistical supply for enterprises and organizations included in the association's structure and over use of the funds allocated;

-- exercises control over the centralized deliveries of logistical resources to kolkhozes, sovkhozes and other agricultural enterprises and organizations;

-- in the event of need, redistributes among the enterprises and organizations included in the association's structure, with their agreement, up to 10-15 percent of the logistical resources allocated;

-- implements priority support in the form of the logistical resources required for carrying out the tasks for the special purpose all-round scientific-technical programs and programs concerned with solving the more important scientific-technical problems and also tasks associated with the introduction into production operations of scientific achievements and leading experience;

-- undertakes measures aimed at the timely installation and placing in operation of equipment at enterprises and organizations included in the association's structure and preventing the formation of above-normal surpluses of material values;

-- organizes the production of local construction materials and distributes them among the kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure;

-- exercises control over the carrying out of measures developed by enterprises and organizations included in the association's structure, concerned with the thrifty use of materials, raw materials and fuel, feed, mineral fertilizers and other material resources and also over achieving reductions in production losses.

Rights and Obligations in the Area of Personnel, Labor and Wages

32. A rayon agroindustrial association:

-- carries out work concerned with providing the kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure with skilled personnel, leaders and specialists;

-- develops and implements measures for creating a reserve of personnel for advancement to leading positions, for supplying the kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure with personnel in the mass professions, determines the current and long-range requirements of the enterprises and organizations for specialists possessing higher or secondary specialized educations and skilled personnel in the mass professions, organizes training and improvements in the skills of workers and kolkhoz members and carries out other measures aimed at creating permanent cadres at enterprises and organizations included in the association's structure;

-- introduces recommendations or gives its consent for the assignment to or the release from the position of leader of an enterprise or organization included in the association's structure and also for employing incentives and penalties in connection with these workers;

-- examines and recommends for introduction into operations at enterprises and organizations included in an association's structure progressive forms for organization and wages;

-- at enterprises included in the association's structure, establishes a uniform regime for the working time of individual groups of workers, within the limits of normal working time during the accounting period;

-- where a production need so exists and with the norms for labor legislation and equipment being observed, sends workers from enterprises and organizations included in the association's structure to perform work on a temporary basis at kolkhozes, sovkhozes and other agricultural enterprises and during the winter and inter-seasonal periods sends workers and equipment under the same conditions from the mentioned agricultural enterprises to other enterprises and organizations included in the association's structure;

-- based upon the standard statutes, approves the conditions for awarding bonuses to leading workers and specialists attached to sovkhozes and other enterprises and organizations included in the association's structure, regardless of their departmental affiliation.

Rights and Obligations in the Area of Finances, Credit, Control, Accounting and Reporting

33. A rayon agroindustrial association:

-- at kolkhozes, sovkhozes and other agricultural enterprises and at organizations included in the association's structure, organizes financial work, carries out measures concerned with strengthening cost accounting, improving the quality of products and lowering production costs and raising profitability, ensures the safeguarding and special purpose and effective use of working capital and accelerating the turnover rate for such capital, preventing a dispersion of resources for purposes not associated with the work of enterprises and organizations included in the association's structure and ensures the timely maintenance of accounts with the State Budget and institutes of USSR Gosbank (USSR Stroybank);

-- distributes the budgetary appropriations and credits allocated for kolkhozes included in the association's structure and also sovkhozes and other agricultural enterprises;

-- organizes control over the observance by enterprises and organizations included in the association's structure of estimate and official discipline and also existing legislation with regard to wages and the issuing of bonuses;

-- obtains from the rayon statistical organ summary data on the course of agricultural operations, on the production and purchases of agricultural products and also other report data required for the operational management of enterprises and organizations included in the association's structure;

-- exercises systematic control over the financial-economic activity of agricultural enterprises and organizations; no less than once each year it carries out a complete documentary audit of the production and financial-economic activity of state agricultural enterprises and inter-farm enterprises and associations; once every two years it carried out a documentary audit of agricultural budgetary institutes; once each year, jointly with the auditing committees of kolkhozes and other cooperative enterprises and organizations, it carries out a documentary audit of their financial-production activity; it furnishes assistance to the auditing committees of kolkhozes. When necessary, it participates in documentary audits carried out at sovkhozes, associations and at state and cooperative enterprises of dual subordination by their higher organs.

IV. Property and Resources of a Rayon Agroindustrial Association

34. The property of a rayon agroindustrial association consists of centralized funds and other property assigned to an association.

The property of kolkhozes included in the association's structure is their own personal property.

The property assigned to sovkhozes and other state enterprises and organizations and the property of kolkhozes included in the association's structure are reflected on their independent balances and the property assigned to the association--on the association's independent balance.

35. In the case of the centralized carrying out by a rayon agroindustrial association of individual production-farm functions, the resources required for this activity are allocated by enterprises and organizations included in the association's structure and in the order and amounts established by the association's council and by agreement with the appropriate higher branch organs.

36. The obligations of a rayon agroindustrial association include responsibility for the property assigned to it, with penalties for failure to carry out this responsibility being issued in accordance with existing legislation of the USSR and the union republic.

V. Reorganization and Elimination of a Rayon Agroindustrial Association

37. The reorganization (merging, adding, dividing, separating) and elimination of rayon agroindustrial associations are carried out by the same organs who handed down the decisions calling for their creation.

38. In the case of a merging of rayon agroindustrial associations, the centralized funds and other property assigned to the associations are transferred over to the new association arising as a result of the merger.

When adding one association to another, the centralized funds and other property assigned to the association being added is transferred to the other association

39. When dividing up a rayon agroindustrial association, the centralized funds and other property assigned to the reorganized association are transferred over to the new associations arising as a result of this division, in accordance with the document dealing with the division.

When separating out one or several new associations from a rayon agroindustrial association and also in the case of the isolation from it of individual enterprises and organizations, the centralized funds and other property assigned to the reorganized association are transferred over to it on the basis of the document dealing with the division (in the appropriate parts).

40. In the case of the elimination of a rayon agroindustrial association, the centralized funds and other property assigned to the association eliminated are transferred over to the kolkhozes, sovkhozes and other enterprises and organizations included in the association's structure, in accordance with an instruction handed down by the appropriate higher organ and taking into account their participation in the creation of this property.

The period of time allowed for the creditors to present their claims to the association eliminated is established by the organ which approved the decision to eliminate the association and cannot be less than 1 month.

The claims against an association that has been eliminated are satisfied by means of its property, against which according to law penalties can be imposed.

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41. A rayon agroindustrial association has a stamp bearing the State Emblem of the union republic and its name.

Draft Diagram of Organizational Structure for Administrative Staff of a Rayon Agroindustrial Association

During a conference held in the city of Gori, a discussion took place on a structural diagram presented by the State Committee for Agricultural Production of the Georgian SSR for the administrative staff of RAPO's considered to be very typical, in terms of their natural-economic conditions, for five rayons -- Goriyskiy, Gurdzhaanskiy, Makharadzevskiy, Gegechkorskiy and Adigenskiy.

The diagrams examined during the conference were developed and approved by all of the services of the state committee and by the appropriate scientific-research institutes of the republic.

The State Committee for Agricultural Production of the Georgian SSR, taking into account the comments and recommendations expressed by participants in the municipal conference and in conformity with the conditions expressed in the speech delivered during this conference by Candidate Member of the Politburo of the CPSU Central Committee and 1st Secretary of the Central Committee of the Communist Party of Georgia Comrade E.A. Shevardiadze, developed a structural diagram for a RAPO administration, the draft of which is published today.

This system conforms fully to the structure of the state committee, with the branch and territorial principles of administration being embodied in it.

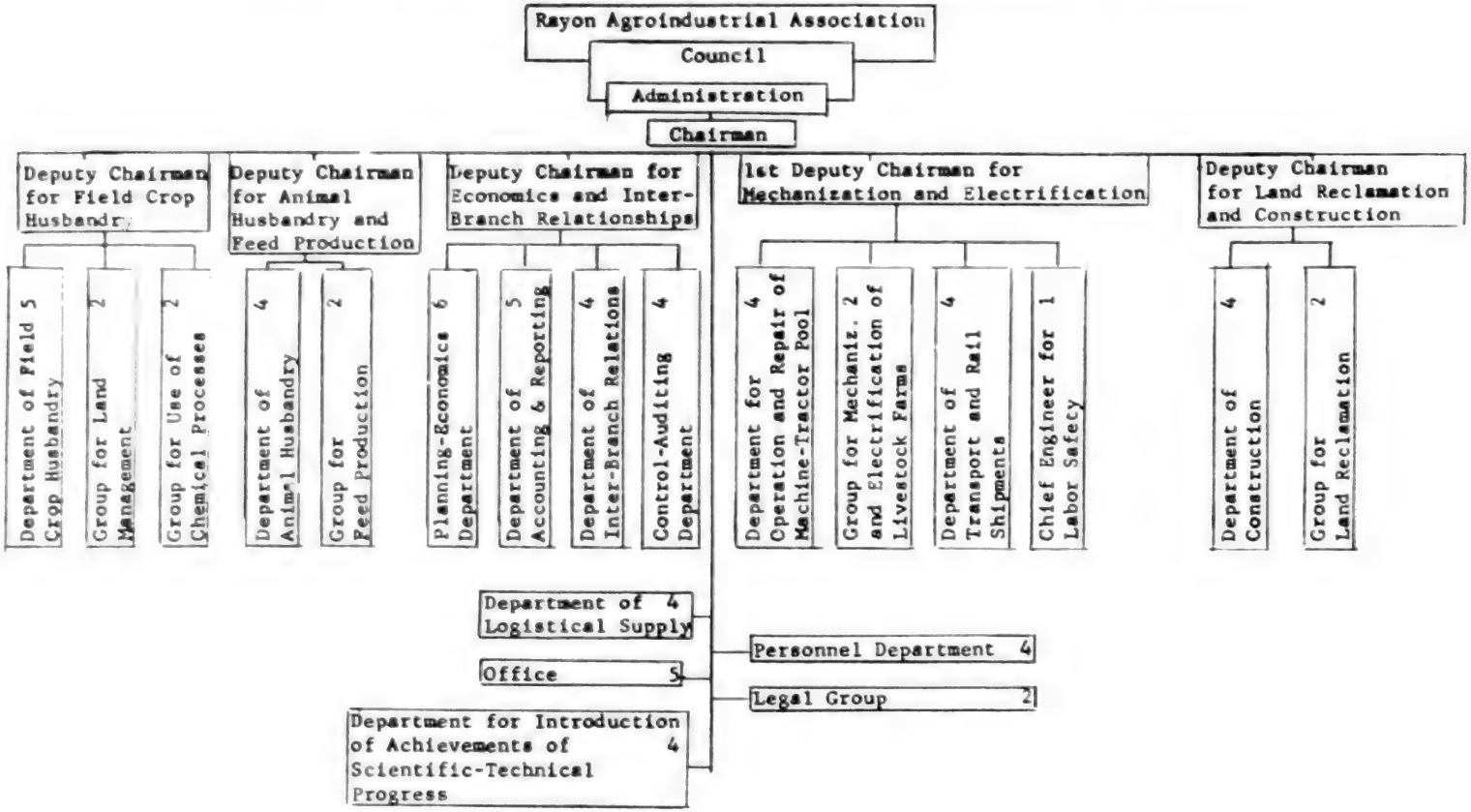
The merging of the principal and service branches directly associated with agricultural production makes it possible to create a model for the rayon level, which precludes the use of a departmental approach, parallelism and cuplication in carrying out the work, unites the interests of all of the production and service elements and directs them towards achieving high final results.

As a result of improvements in the existing structure for a rayon agroindustrial association, a considerable reduction will take place in the number of administrative personnel. Moreover, a simplification in the structure will not result in a deterioration in administration of the branch, but rather will improve it and make it more efficient. A reduction in the size of an administrative staff for a RAPO on the whole will make it possible to release hundreds of staff units, as a result of which many skilled specialists from the administrative sphere will be channeled directly into production operations.

Compared to the existing RAPO structure, what is new in the structural diagram herein presented?

The deputy chairman of the agroindustrial association will become a chief figure, one responsible for the status of affairs in the branch entrusted to his care and for achieving the final results.

Structural Organization for Administrative Staff of Rayon Agroindustrial Association



The plans call for the position of deputy chairman of an association for animal husbandry and feed production, with appropriate functional subunits which must ensure further improvements in a branch considered to be of special importance to the republic -- animal husbandry and strengthening of the feed base.

The new diagram reflects the positions set forth in the decisions handed down during the December (1983) Plenum of the CPSU Central Committee and in the party resolutions adopted for our republic. This applies mainly to strengthening the economic services. The plans call for the creation of an inter-branch department, the chief task of which consists of thoroughly analyzing the status of affairs in individual branches of the agroindustrial association, ensuring coordination of their interests and improvements in the economic relationships of partners and in the forms for joint activities.

Distinct from the existing diagram for administration, the new diagram abolishes the independent organs of administration for engineering services in a rayon and appropriate functional structural subunits are created in their place within the administrative staff for a RAPO and this ensures unity in the engineering service at the rayon level.

Up until recently, this function was performed by the chief of raysel'khoz-tekhnika, who serves simultaneously as the deputy chairman of the agroindustrial association.

In the new structure, the deputy chairman for mechanization and electrification is allotted functional rights; he is equally responsible for the status of affairs at kolkhozes and sovkhozes and also at service enterprises. Similarly, a solution was found for the problem of organizing services for land reclamation, the use of chemical processes and construction.

In the new structural diagram for a rayon element, logistical supply is presented as an independent functional subunit , whereas in the actual structure for logistical supply it is divorced from agricultural production and its operation is not controlled by a rayon agroindustrial association.

At the present time, with the state committee being created based upon three departments, for the purpose of implementing a uniform policy in the area of logistical supply, it has become advisable to isolate it out as an independent functional subunit which, in conformity with the plans for the social and economic development of the rayon agroindustrial complex, regulates the distribution and sale or bartering of logistical resources. The formation of this service, directly subordinate to the chairman of the agroindustrial association, excludes the possibility of an unjustified extension of privileges to any one of the branches.

The creation of independent services for logistical supply will improve considerably the work of determining the demand for resources, their planning, sale or bartering and use.

The structure provided herewith calls for the creation of a department for transport and railroad shipments. Within the state committee, motor transport

operations are becoming an important part of the system, with optimum administrative organization being the chief task of this service.

Important innovations are presented in the diagram for the service for the operation and repair of the machine-tractor pool, from the standpoint of both its functional and productive sectors. These services must ensure normal operating conditions for the agricultural equipment at each enterprise in the system and improvements in the effectiveness of their use.

At the present time, with all of the resources of the engineering services being combined and directed towards the carrying out of mechanized operations at the kolkhozes and sovkhozes, the appropriate functional services are obligated to ensure efficient organization in the formation of plans for the mechanized work, their fulfillment, maneuvering and control and to bear responsibility for the final economic results.

With the formation in the rayons of a single control element for the agroindustrial complex, broad opportunities are opening up for developing the engineering industry in the rural areas and strengthening its logistical base. Simultaneous with the development of agriculture, the branches which provide services for it must also be developed. The work of each one of them must be defined in a manner such that it will promote highly efficient agricultural production and provide an optimum profitability level.

The new diagram calls for the creation of a personnel department which will concentrate its attention on matters concerned with the selection, placement, training and improvements in the skills possessed by the personnel at kolkhozes, sovkhozes and other agricultural enterprises and organizations.

In accordance with the new diagram, the plans call for the creation of a department for introducing the achievements of scientific-technical progress into operations, the principal task of which will be to accelerate the introduction of scientific and engineering innovations into agricultural production, disseminate progressive forms for scientific labor organization and material incentives and to make extensive use in production operations of an automatic system for control and dispatching.

The standard diagram being published today for the administrative staff of an association calls for the foundation to be laid for developing the structure for administrative staffs for individual rayon agroindustrial associations in the republic; in addition, when determining the staff structures and the expenses required for maintaining them, the specific economic conditions prevailing in each rayon should be thoroughly taken into account. Taking into account the comments and recommendations made during the course of a general discussion of the project and following an examination of them within the Central Committee of the Communist Party of Georgia and by the republic's government, a special committee formed in the State Committee for Agricultural Production in the Georgian SSR, during the 1st quarter of this current year, will complete the creation and formation of rayon elements of control for the agroindustrial complex.

The Central Committee of the Communist Party of Georgia expresses the hope that each worker in the republic will acquaint himself thoroughly with the draft

statute governing a rayon agroindustrial association published in the press and also with the structural diagram for the administrative staff of a RAPO and present their proposals and considerations to the State Committee for Agricultural Production of the Georgian SSR.

7026
CSO: 1824/202

GOALS FOR 1984 SPELLED OUT FOR FRUIT, VEGETABLE MINISTRY ENTERPRISES

Moscow SEL'SKAYA ZHIZN' in Russian 9 Feb 84 p 1

[Unsigned article: "On Toward New Frontiers: Socialist Pledges of the Work Collectives of the USSR Ministry of the Fruit and Vegetable Industry for 1984"; passages rendered in all capital letters printed in boldface in the original source]

[Text] Translating into reality the decisions of the 26th CPSU Congress and the May (1982) CPSU Central Committee Plenum on implementing the Food Program, the workers of the country's fruit and vegetable industry advanced toward new frontiers in economic and social development.

In 1983 the volume of the output and procurements of potatoes, vegetables and fruits increased by 7 percent compared with 1982, of which vegetables alone 6 percent and fruits, including citrus fruits, alone 18 percent. The output of canned fruits and vegetables also increased.

The material-technical base of the branch has grown and the profitability of agricultural production has increased.

Guiding themselves by the decisions of the December (1983) CPSU Central Committee and the directives of Yu. V. Andropov, General Secretary of the CPSU Central Committee, the workers of the system of the USSR Ministry of the Fruit and Vegetable Industry, having launched their socialist competition for fulfilling and overfulfilling the 1984 plan targets, are adopting the following pledges.

On the basis of the application of the achievements of science and technology, advanced knowhow, brigade forms of the organization and stimulation of labor, tighter discipline, more efficient utilization of material and financial resources and streamlining of management, the collectives pledge themselves to increase labor productivity by 1.2 percent and reduce production cost by 0.5 percent in their sovkhozes, industrial enterprises and construction and transport organizations. As a result, theyt expect to reduce mean annual employment in agriculture by 17,000 persons, increase industrial output by 80 million rubles, and augment income by 50 million rubles in excess of the approved plan.

THE PROCUREMENT ORGANIZATIONS of the USSR Ministry of the Fruit and Vegetable Industry WILL PURCHASE in excess of the plan 24 million tons of fruits, vegetables and potatoes, which is 4 percent above the plan.

On the basis of further specialization, concentration and agro-industrial integration, the plan for procurements of agricultural produce will be overfulfilled in the sense that the Ministry's sovkhozes will sell additionally to the state 10 million tons of vegetables, or nearly 1 million tons more than last year; 2 million tons of fruits and berries; 950,000 tons of grapes; and 400,000 tons of early potatoes.

To improve fruit, vegetable and potato supplies to the population of large industrial centers and regions of the Far North, Siberia and the Far East, the All-Union Fund will be provided with 4 million tons of vegetables and melons; 1.5 million tons of fruits, including citrus fruits, and grapes; and 2.4 million tons of potatoes. This is altogether half a million tons more than last year's deliveries.

The production and sales of hothouse-grown and early vegetables, green crops, garlic, onions, eggplant and sweet pepper will be increased. The plan for the production and sales of vegetable seeds will be overfulfilled by 5 percent.

IN THE PROCESSING INDUSTRY the output of canned fruits and vegetables will be increased by 670 million standard cans compared with 1983. Of this amount, the increase in the output of canned infant foods alone will be 75 million standard cans. The output of dried vegetables and potatoes will be raised to 17,000 tons; dried fruits, to 40,000; and fresh-frozen vegetables and fruits, to 32,000 tons. The output delivery tagets will be fulfilled ahead of schedule and 90 million rubles of output will be sold in excess of the approved plan.

To assure a regular flow of fruit and vegetable supplies and improve their quality, the work to strengthen the material-technical base of procurement and marketing organizations should be continued, and the volume of on-the-spot pickups of fresh produce and their deliveries directly to the store ("field-to-store delivery") will be increased by at least 10 percent.

The preparation of storage facilities for the reception of the potato, vegetable and fruit harvest will be completed by 1 September 1984. Retail trade in the Ministry's specialized stores will be increased by 3.5 percent and the sales of packaged produce by 7 percent.

The conveyance of perishable produce by all means of transportation will be further streamlined and the utilization of the refrigerated carrier pool made markedly more efficient.

The volume of palleted and containerized hauls of fresh and processed produce will be increased to 3.1 million tons.

The concentration of capital outlays on projects scheduled for the most immediate completion, the application of prefabricated modular components in construction, and the modernization and renovation of existing enterprises should result in complementing the planned new capacities for canning fruits and vegetables by an additional 112 million standard cans and the capacities for the storage of potatoes, vegetables and fruits by an additional 61,000 tons at a time.

To further improve the housing, cultural and living conditions of the branch's workers, housing with an aggregate dwelling area of 1,556,000 square meters will be built, which is 204,000 square meters more than in 1983, along with creches and kindergartens providing 12,500 additional vacancies, elementary schools providing 20,000 additional vacancies and 500 kilometers of intra-farm roads.

The collectives of the sovkhozes and procurement, transport, trade and construction organizations of the system of the USSR Ministry of the Fruit and Vegetable Industry assure the CPSU Central Committee and the Soviet government that through their strenuous and highly productive labor they shall assure the fulfillment of the adopted socialist pledges and the targets for 1984 and make a worthy contribution to the implementation of the country's Food Program.

THESE SOCIALIST PLEDGES WERE DISCUSSED AND ADOPTED AT MEETINGS OF WORK COLLECTIVES OF THE USSR MINISTRY OF THE FRUIT AND VEGETABLE INDUSTRY.

1386
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MEASURES RECOMMENDED TO IMPROVE APK PLANNING IN MOLDAVIA

Kishinev KOMMUNIST MOLDAVII in Russian No 11, Nov 83 pp 41-45

[Article by S. Muravskiy, deputy director of the Scientific Research Institute for Planning at the Moldavian SSR Gosplan, candidate of agricultural sciences: "Ways of Improving APK Planning"]

[Text] Assuring the optimal planning, effective management and maximally efficient operation of the APK [Agro-Industrial Complex] is a complex problem of the present-day development of the socialist society. In view of the end-goals of APK production, it has to be stated that assuring its normal development requires solving a complex whole of long-range, medium-range and current urgent problems. This accounts for the need for a thorough and scientifically substantiated planning of the development of the APK over periods of time.

The complexity of the planning and management of the APK is largely due to the fact that this socio-economic system encompasses a multitude of branches, subsectors, types of production and kinds of activity existing in a broadly ramified interrelationship as well as numerous forms of organization and management. Since the plan is a directive-based, addressed document, its structure should correspond to the complex organizational-economic and administrative-managerial structures of the APK. Until recently this circumstance was reflected in the broad development of the principle of branch-based planning and management. However, practice shows that, although it is geared to the interests of the national economy as a whole, the emphasis on the branch principle of the planning and management of the national economy does not assure the solution of many highly important problems. The consideration of inter-territorial, inter-branch and inter-departmental problems which cannot be encompassed within the framework of branch and territorial planning requires an intensified use of the new and more effective targeted-program method. The superiority of this method over the branch and territorial approaches consists in that it assures gearing the production process of the entire APK sphere to the attainment of end-results. A specific embodiment of the principle of the targeted-program planning of APK development in practice is the USSR Food Program Through 1990, which was drafted in accordance with the directives of the 26th CPSU Congress and approved by the May (1982) CPSU Central Committee Plenum.

To assure scientifically substantiated APK planning, it is primarily necessary to isolate the APK from the overall national-economic complex and, on defining

its boundaries, establish its external connections and internal structure, this being a topical task of agrarian-economic science.

The APK as a uniform system is formed not only by combining existing branches of the national economy into a single whole but also and to a large extent by isolating, detaching from the existing branches of the national economy discrete kinds of activity and discrete primary organizational-economic forms (enterprise, production associations, organizations and institutions) as well as subsectors, integrating them and forming on this basis new primary elements and more complex subsystems (subcomplexes of the APK) performing new functions of the production and implementation of particular groups and types of final products within a single organizationally discrete technological chain.

It follows from the above that isolating the APK should proceed primarily on the basis of determining its functional structure.. In this connection, the external boundaries of the APK as a unified system do not necessarily coincide with the boundaries of the existing branches and subsectors of the national economy. Most often, they split the traditional branches and subsectors into different parts from which are formed new organizational-economic formations representing component elements of the APK subsystem.

Thus, the organizational-economic structure of the APK is gradually formed on the basis of the implementation of particular functions through their organizational integration within the framework of specialized primary formations. That is, a network of agro-industrial enterprises and associations is established. To direct their activities, a system of republic-level administrative organs is formed, that is, the administrative-managerial structure of the APK is set up.

This principle is followed in the Moldavian SSR during the ongoing establishment of agro-industrial associations, various production and scientific-production associations and inter-branch specialized product subcomplexes of the APK along with their corresponding republic-level administrative organs such as the Ministry of the Fruit and Vegetable Industry, the Ministry of Viticulture and Wine-Making, the Moltabakprom [Moldavian Tobacco Industry Administration], the Moldefirmasloprom [Moldavian Essential Oils Industry Administration] and others.

The thus forming primary elements of the APK and agencies for their administration are becoming the addressees of the planned state tasks and recipients of resources for the production and sales of APK products. They base their activities on an integrated system of plans for social and economic development. This raises fairly complex problems in streamlining APK planning so as to make more universal and substantiated the indicators of the development plans for the so-called "pure branches" included in the APK structure. Equally complex problems then arise as regards guiding the drafting of comprehensive plans for the development of new organizational-economic formations representing relatively autonomous elements or entire subcomplexes of the APK and directed by corresponding administrative agencies.

It should be noted that at present, although agro-industrial enterprises have long since started operating, their operations still are based on the traditional branch principle. That is, their plans essentially represent a simple summation of branch indicators, both at the level of enterprises and

associations and at the level of inter-branch product subcomplexes and the APK as a whole.

Agrarian-economic science and planning-administrative practice face complex tasks of developing a well-organized system of comprehensive and composite inter-branch plan indicators of the development of agro-industrial formations at every hierarch-ical level, working out explicit methods for calculating these indicators, and devising a compact and integrated system of plan documents that reflect most adequately the processes of the actual functioning of agro-industrial formations as a whole rather than of their discrete branches.

The entire system of plan indicators should be geared to achieving results at minimum expenditure of natural, labor, material, equipment, energy, financial and other types of resources per unit of finished output, rather than merely to intermediate raw materials and semifinished products according to stages of the integrated technological cycle of production as is being done at present. In other words, branch-based planning process should increasingly be complemented with inter-branch planning. In this connection, branch planning itself should be expanded and deepened in view of the intensification of, on the one hand, the process of the social division of labor, specialization and concentration of production in the so-called "pure branches," and, on the other, the process of agro-industrial integration and the creation of complex comprehensive formations.

However, the drafting of plans with allowance for the organizational-economic and departmental-administrative structure of the APK, even if done at the level of subcomplexes and agro-industrial formations, also is insufficient to assure the optimal comprehensive development of the APK. In this connection, the May (1982) CPSU Central Committee Plenum stressed the need for a sharp improvement in the territorial planning and administration of the APK. Special importance is attached to the planning and management of the APK's of administrative rayons, since rayon agro-industrial complexes are becoming the decisive form of the organization of production in this sphere of activity. The "Standard Statute of the Rayon Agro-Industrial Association" points out that "The activities of the rayon agro-industrial association are based on the composite 5-year and yearly plans for economic and social development that they draft for the agro-industrial complexes in their rayons...." In the Moldavian SSR this statute applies wholly and entirely to the activities of the rayon APK councils and their working organs represented by rayon agricultural administrations.

The growth of agro-industrial integration and the establishment of republic-level organs for the administration of discrete inter-branch product subcomplexes of the APK make it urgently necessary to coordinate their activities, which can be achieved only by drafting integrated and scientifically substantiated long-range and annual plans for the development of the Moldavian SSR APK as an integral territorial system. The coordination of activities of the inter-branch APK subcomplexes has been entrusted to the Commission for Problems of the Agro-Industrial Complex under the Presidium of the Moldavian SSR Council of Ministers, while the drafting of integrated plans for the development of the republic's APK has been entrusted to the Moldavian SSR Gosplan. However, as noted above, just as in the case of branch planning, territorial planning--even when complemented with planning at the level of APK

subcomplexes--still does not fully meet the requirements of a balanced and optimal planning of the APK. Further improvements in planning methodology and procedures, to be broadly based on principles of the targeted-program approach, are needed. This refers to the drafting of targeted comprehensive programs and subprograms on the principal problems and their incorporation as inseparable component elements into the plans for the economic and social development of territorial APK's. These programs should extend not only to the republic level but also to the rayon level of administration, because at the present stage the principal problems of APK production are being solved precisely at the rayon level.

Thus, the system for planning the development of the republic's APK should encompass subcomplex-branch, territorial and targeted-program aspects. The integrated plan for the economic and social development of the APK should be drafted on the basis of:

a) calculation of different variants of the plan for the development of the republic APK and its inter-branch subcomplexes, as well as of discrete branches, with the aid of economic-mathematical methods and computers, while at the same time drafting targeted comprehensive programs and subprograms as component elements of these plans. This work is handled by experts at republic ministries and departments as well as at the Moldavian SSR Gosplan and its scientific-research planning institute. Here allowance should be made for the target figures communicated by the USSR Gosplan and other all-Union organizations and institutions. In turn, target figures for the rayon administrative level should be drafted;

b) formation of integrated territorial plans for the economic and social development of rayon APK's, on incorporating in them the rayon-level targeted comprehensive programs and subprograms with allowance for the target figures communicated by the republic administrative organs;

c) The meshing of the integrated plans for the economic and social development of rayon APK's, as well as of rayon-level targeted comprehensive programs and subprograms, upon isolating within them discrete republic-level APK subcomplexes and interdepartmental boundaries. This meshing is to be done by experts from the republic's ministries and departments and the Moldavian SSR Gosplan;

d) comparing the indicators of plan variants and targeted comprehensive programs and subprograms drafted for the republic as a whole with the composite indicators of rayon APK's and assuring on this basis the coordination of republic and rayon goals, resources and measures to promote the APK;

e) examination of the agreed-upon plan variants and targeted comprehensive programs and subprograms by the Commission for Problems of the Agro-Industrial Complex under the Presidium of the Moldavian SSR Council of Ministers, with their subsequent submission for approval to the republic's government.

Such should be, in our opinion, the organizational system and structure of the plans for the economic and social development of the republic's APK.

This entire system is dominated by the time factor, meaning that it is necessary to draft long-range, medium-range and current plans for the development of the APK--plans that are tightly interrelated by a pellucid system of

composite indicators characterizing both discrete branches, spheres of activity and subcomplexes and the APK as a whole as an integrated subdivision of the national economy.

The introduction of such a planning system requires of agrarian-economic science a marked expansion of its front of research into the forecasting of discrete plan-economic indicators of APK development and the elaboration of a system of scientific-technological, socio-economic and ecological forecasts, as it has to be stated bluntly that at present scientific forecasting in the APK sphere leaves much to be desired. It is expedient to set up teams of experts for regular work on these problems at economics research institutions as well as at the republic organs administering the APK.

Improvements in 5-year and yearly planning require developing a scientifically substantiated system of technological and socio-economic plan norms. This task can be accomplished only through the united effort of experts at all levels of the organization and management of APK production, under the scientific-methodological direction of the economics research institutions and the republic Gosplan.

Attention has to be drawn to the extremely unsatisfactory functioning of the database for a scientifically substantiated determination of society's needs for various kinds of raw materials and semifinished and finished products of the APK in our republic. As a result, planning is most often based on the principle of "advancing from the achieved level." In view of the high growth rate of the APK as a whole and the differing growth rates of the various branches of material production composing the APK, planning by "advancing from the achieved level" results in marked disproportions. The most tangible of these disproportions are: the discrepancy between the purchasing power of the population and the extent to which its demand for the most nutritious foodstuffs of animal origin can be met, which is due primarily to the lag in the development of the fodder base compared with the growth of the livestock herd and poultry flocks; the absence, in many branches of agriculture, of comprehensive mechanization of production processes despite the availability of large quantities of machinery and equipment; shortages of the agricultural means of transportation and storage facilities needed to assure the prompt transportation of produce from the fields and the organization of their storage, which result in considerable losses of raw materials and processed foodstuffs; the absence, at a majority of branches of the processing industry, of reserve capacities, or even of the needed capacities, for processing agricultural raw materials within optimal periods of time.

As labor-intensive branches of production develop within the sphere of the republic APK, the problem of assuring adequate manpower and utilizing it most efficiently is becoming increasingly topical. The situation is particularly unsatisfactory at the rayon APK level, which until recently was largely due to the administrative compartmentalization of farms. Now that rayon APK councils have been established, it seems to us that an integrated plan for the allocation and utilization of rayon manpower resources within the APK sphere should be developed for every individual rayon, and that it should provide for material incentives to workers, thus serving to reduce the mobilization of the sometimes relatively ineffective labor of the urban population for this purpose.

Emphasis should also be placed on the tremendous importance of an adequate flow of statistical and plan information as a means of directing and assuring the efficient operation of the APK. The extremely intricate structure and manifold relationships of the APK objectively require processing a considerable volume of information indispensable to managing the process of production, distribution, exchange and consumption. Attempts to cope with this volume of information by means of traditional (manual) techniques result in considerable overstaffing of clerical personnel as well as in the lag of planning and accounting behind the growth rate of material production. Thus, the time is ripe for setting up a well-organized industrialized system of information processing based on the broad utilization of economic-mathematical methods and computers. In our times, all the experts, planners and executives working in the APK sphere should know how to use these new methods and computers.

1386
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PROBLEMS OF FRUIT, VEGETABLE PRODUCTION IN FAR EAST EXAMINED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 1, Jan 84 pp 71-73

[Article by P. Logachev, candidate of economic sciences: "The Production of Fruits and Vegetables in the Far East"]

[Text] The further development of the industrial and building potential of the Far East persistently demands that this region's agriculture satisfy the needs of the population with regard to potatoes, vegetables, milk, eggs and meat primarily by means of local production.

The resolution of the CPSU Central Committee and the USSR Council of Ministers, "On the Comprehensive Development of Agriculture in Siberia, the Far East and Kurgan Oblast," suggests to ministries and departments of the USSR, the RSFSR Council of Ministers and party, soviet and agricultural organs of oblasts and krays the development of highly intensive agricultural zones specializing in the production of potatoes, vegetables, meat, milk, eggs and other products to be located near large cities and industrial centers.

Complicated natural-economic conditions and limited labor resources result in an unstable growth in the pace and volume of agricultural production in the region. A modern industrial basis for agricultural development, an expansion of the scale of mechanization, chemicalization and reclamation and the introduction of a new administrative mechanism are essential for mitigating the effects of unfavorable weather conditions on agricultural production, for increasing its stability and effectiveness and for maximally utilizing regional possibilities in supplying the population with food.

However, in Maritime Kray highly intensive zones specializing in the production of vegetables, potatoes (early varieties) and whole milk products are developing extremely slowly around cities and industrial centers although the production base in the Maritime Kray, the most distant region of the country, is less developed than in the populated central part of the Soviet Union. This is why the question of creating a stable food base guaranteed against unfavorable weather conditions, especially for the production of products that do not withstand shipping well and that perish quickly, such as vegetables, potatoes and milk, is very urgent in the Maritime Kray.

During the 10th Five-Year Plan the Maritime Kray implemented a comprehensive program for increasing vegetable production on the basis of specialization and concentration as well as of the development of irrigated vegetable farming.

Still the productivity of vegetables remains fairly low and unstable despite some tendencies toward growth. During the last two five-year plans over one-fifth of sovkhozes cultivating vegetables produced a harvest that was 30 percent lower than the average annual harvest during the same type of preceding period. Even in the specialized vegetable raising enterprises of the Primorplodoovoshchekhoz [Maritime Kray Fruit and Vegetable Enterprise] Association located primarily in the basin of the Razdol'naya River, the average annual productivity of vegetable crops during the 10th Five-Year Plan surpassed this indicator for the kray as a whole to an insignificant degree.

At the present time the population's supply of vegetables from private plots does not exceed 40 kilograms per person per year. In order to meet the needs of the population in the Maritime Kray with regard to vegetables, over one-fourth of them must be imported each year from other distant regions of the country.

At the same time in its natural-economic conditions the Maritime Kray is the most favorable region in the Far East for the development of agriculture and for the cultivation of any agricultural crops found in the central regions. Nevertheless, exceedingly complicated soil-climatic conditions and extremely varied precipitation in the course of the vegetative period make it difficult to produce large and stable vegetable harvests without the artificial regulation of the soil's water regimen.

In the kray considerable work has been done in the area of production concentration and specialization for vegetables; the technical equipping of this branch has improved. Previously, 128 enterprises (65 percent of all sovkhozes) were involved in vegetable production in the Maritime Kray. At the present time their number has decreased by one-half. But even today 45 percent of the sovkhozes have an average of 60 hectares for crops and produce 500-550 tons of vegetables per enterprise.

Even in the specialized fruit-vegetable association half of the vegetable sovkhozes have an average of 126 hectares to devote to vegetable crops; each of them raises an average of about 1,400 tons of vegetables per year. At the same time five sovkhozes with a sowing area for vegetables of 500 and more hectares provide 65 percent of the vegetables produced by the association, or almost one-third of the gross vegetable output of all sovkhozes in the kray (1980). One of the largest specialized vegetable-raising enterprises of Maritime Kray, the Korsakovskiy Sovkhoz, raised and sold the state almost 35,000 tons of vegetables during the 10th Five-Year Plan (an average of 7,000 tons for each year of the five-year plan) and reached an average annual productivity during that period of 145 quintals per hectare.

Thus, in the Maritime Kray commodity vegetable farming is still developing slowly and it does not fully satisfy the needs of the population. The basic reasons for this situation are the inadequate concentration and specialization

of production of vegetables, potatoes and whole milk in the environs of large cities and industrial centers in the kray, the slow transition of vegetable plantations toward irrigation, the underutilization of highly fertile bottom lands and the lack of dependability of water supplies.

In the Maritime Kray the population is distributed very unevenly. Almost half of it is found around the kray center, Vladivostok, and the cities Artem and Ussuriysk, which according to territory belong to the same zone with regard to the supply of fruit and vegetable products (specialized vegetable-potato growing farms border these directly).

In turn, the economic-geographic status of the kray center, which is not central in the kray in its location, complicates the supply of perishable fruits and vegetables that cannot withstand shipment and full milk products to a population of almost 1 million (in the near future) due to losses of quality and weight during shipments of long duration and due also to the growth in shipping expenses.

In order to develop a suburban agricultural zone it will be necessary to include in crop rotations up to 20,000 hectares of bottom land, suitable with irrigation, and 35,000 hectares of dry farming land for feed crops. It is planned to place vegetables and potatoes only on light (sandy loam and sandy) irrigated lands with 6,500-7,000 hectares per crop. With the goal of guaranteed production of succulent feeds it is planned to include corn in irrigated vegetable crop rotations on an area of 3,500-4,000 hectares.

For this the floodlands of the Razdol'naya River, which almost directly border Vladivostok, Artem and Ussuriysk, will be very important. The soil-climatic conditions of this land are particularly favorable in the Oktyabr'skiy and partially in the Ussuriyskiy rayons, where field work begins 2-3 weeks earlier than in the central part of Maritime Kray and where almost all crops are concentrated.

The basin of the Razdol'naya River is characterized by the high degree of agricultural development of the land fund and belongs to the suburban vegetable-potato-dairy zone. Over 45,000 hectares of highly fertile land have been developed in the river's flood plain, including 34,000 hectares of agricultural lands (of these 21,000 hectares are plowland). The entire land area of this flood plain that has been allocated for agricultural purposes comprises almost 335,000 hectares.

Thus, the basin of the Razdol'naya River is fully suitable for developing a large highly concentrated suburban zone capable, following the necessary development, of fully supplying the population of the large cities in the Maritime Kray with fruits and vegetables during any type of weather on the basis of its land resources, its high quality soil composition, its closeness to the kray center and to the cities of Artem and Ussuriysk, its common water source and its favorable weather-economic conditions.

In the future the favorable soil-climatic conditions of the southern portion of Maritime Kray may also be utilized, especially for cultivating warmth-loving vegetables and for exporting them to regions being developed with regard to industry and transportation.

However, it is impossible to produce large and stable harvests of vegetables and potatoes without artificial irrigation, even if crops are located on the highly fertile soils of river flood plains.

For this reason the development of large land areas of irrigated farming in the suburban zone near Vladivostok and the building of a single, technically-improved suburban irrigation system with double regulation of the water regimen, with dependable water sources and guaranteeing the uninterrupted supply of water for irrigation in the course of the entire vegetative period under any type of weather conditions are among the fundamental prerequisites for the stable production of vegetables and early potatoes in the Maritime Kray.

The Vladivostok suburban irrigation system, located in the flood plain of the Razdol'naya River, can function successfully if a solution is found to the problems of guaranteeing water supplies for agricultural crops in the course of the entire vegetative period and of protecting crops from flooding. The severe monsoon climate results in frequent devastating floods during the summer-fall period and in almost annual spring-summer droughts. More extensive flooding recurs once every 7 years and approximately once every 10 years water flood levels reach 5-6 meters.

In our opinion, among the measures to counteract flooding in the flood plains of the Razdol'naya River the most fundamental is that of damming without regulation of the current. In this case the flood plain is protected by the building of polders which are protected from flood waters by dams and from runoff water from slopes by water channels on slopes.

The area of polder protected from flooding by flood or runoff waters by means of damming the Razdol'naya River will exceed 70,000 hectares, including almost 46,000 hectares in Nadezhdinskiy and Ussuriyskiy rayons, which border directly on Vladivostok and Ussuriysk. This will not only secure the uninterrupted supply of vegetables and early potatoes to the population of the kray center but also fully solve the problem of producing potatoes in the Maritime Kray by means of locating crops on its flood plains.

Capital investments into engineering measures in the struggle against flooding are repaid in a short period of time and, most importantly, they will eliminate instability in supplying the region's population with important foods.

The work experience of sovkhozes located in the flood plain of the Razdol'naya River confirms the lack of dependability of water supplies for crop irrigation during dry spring-summer periods related to this river alone in connection with the impossibility to regulate its current and with the low water level of tributaries. Water balance calculations show a water deficit in the tributaries of the Razdol'naya, especially during the summer period, when they become extremely shallow and cannot provide for the necessary filling and support of water reserves in irrigation water reservoirs if these are built upstream.

Taking into account the planned scale of development of irrigated farming it is essential to solve the important problem of dependable water supplies to most of the plains portion of agricultural lands in the southern part of the Maritime Kray and mainly in the Vladivostok suburban zone. Another important problem is the uninterrupted water supply of the Prikhankayskaya Lowlands by transferring water from large natural water sources in the basin.

At the present time in the Far East there are no completely built and developed large irrigated massives or developer enterprises that could be utilized as model (standard) specialized suburban enterprises of the vegetable and dairy direction with regard to the conditions of the Maritime Kray.

We have worked out an economic-mathematical model of the optimal branch structure and sizes of suburban vegetable-dairy sovkhozes on the basis of irrigated farming, i.e. an optimization of efficient types of agrarian enterprises suitable for the conditions of the Maritime Kray.

On the basis of the mathematical model and elaborated technical-economic coefficients the EVM-222 [Electronic computer] has solved the economic-mathematical problem of programming a modified simplex method.

As a result of an analysis of tasks dealt with by the computer, the best variant for Maritime Kray conditions turned out to be the suburban vegetable-dairy enterprise with 2,600 hectares of irrigated land, 4,385 hectares of dry-farming land (with a consideration of fallow) and 3,500 head of cattle, including 2,000 cows.

The leading branches of such a specialized enterprise would be vegetable farming, potato farming and dairy farming. Our studies have determined that the area in vegetable crops in such a sovkhoz in the suburban region of Vladivostok should be within the limits of 800 to 1,200 hectares; in potatoes--no fewer than 800 hectares; and the size of the herd of cattle--2,000 head. Moreover, vegetables and potatoes should be located only on highly fertile irrigated lowlands. In this case the volume of production output in such an enterprise will comprise 22,000-32,000 tons of vegetables, 15,000 tons of potatoes and 8,000 tons of milk. As computer calculations show, the economic effectiveness of producing agricultural products in the recommended optimum suburban vegetable-dairy sovkhoz reaches 7-9 million rubles of clear profit from sales of commodity products, including 3-5 million rubles from vegetable farming.

It should be emphasized that 6-8 such large specialized suburban vegetable-dairy sovkhozes built in the basin of the Razdol'naya River, if provided with dependable supplies of water resources and protected from catastrophic flooding, will be capable of uninterruptedly supplying the trade network with up to 160,000 tons of vegetables, 60,000-80,000 tons of early potatoes and 35,000-40,000 tons of milk and fully satisfying the needs of the populations of Vladivostok, Artem and Ussuriysk with regard to vegetables, early potatoes and partially,whole milk, under any kinds of weather conditions.

The total volume of capital investments for the building of the Vladivistok suburban irrigation system in the flood plain of the Razdol'naya River and for the comprehensive development of irrigated lands for the production of fruit and vegetable products will comprise 480 million rubles according to our calculations, including about 100 million rubles for the engineering protection of lands (polders) against flooding. The annual volume of clear income from products sold in the final year of construction in the suburban zone as a whole will comprise 57 million rubles, including 20 million from vegetable farming. The coefficient of economic effectiveness of capital investments into the full-scale building of the Vladivostok suburban system in the Razdol'naya River flood plain on an area of 20,000 hectares following the completion of building and the complete assimilation of reclaimed lands will equal 0.12 and the period in which the investment will be repaid will not exceed 8 years.

In this way, capital investments directed at the building of an irrigation system can be recognized as effective and economically expedient.

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PARTY ASSESSES PROBLEMS OF IRKUTSK OBLAST TIMBER INDUSTRY

Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 83 p 5

[Article by V. F. Malov, secretary of the Irkutsk Oblast Committee of the CPSU: "Responsibility for the Timber Complex"]

[Excerpt] A subject of great concern and attention for the oblast party organization is the problem of developing and increasing the effectiveness of the operations of the timber complex. It is systematically examined in the bureau and plenums of the oblast committee and city and rayon party committees and it was discussed at report-election meetings.

The Initiative of Leading Collectives

The CPSU oblast committee has made a positive evaluation, in particular, of the work of the Angara and Ust'-Ilim city party committees, which actively support the initiative of leading collectives. The Angara party city committee, for example, did a great deal of organizational and mass-political work, which facilitated the extensive introduction of complete processing of timber in the Kitoyles Association. The success of the collective is characterized by a sharp improvement in the utilization of raw materials and the complex of measures worked out for this purpose is reflected in one of the expositions at the USSR VDNKh [Exhibition of Achievements of the National Economy of the USSR].

The maximal use of production wastes is a subject of constant concern for A. Vergina, head of the local party organization of the timber processing shop in the association. In the shop records are kept of timber wastes and since 1981 all wastes without exception have been recycled. They are used to make facing materials for houses, children's articles and other goods worth a total of over 150,000 rubles per year. The assortment of consumer goods keeps expanding and the quality of goods is improving.

The work experience of the party committee of the production association, Ust'Ilim Timber Industry Complex, is also deserving of attention. It was able to increase the vanguard role of communists in production. The party committee and local party organizations have brought party-political work to brigades and shifts and are striving to strengthen and develop brigade forms of organizing and stimulating labor, to increase their influence on the education

of members in the collective. Today 79 percent of the complex's workers belong to brigades; of these over 95 percent are in basic production. Within brigades 56 party groups have been created and 169 party organizers have been confirmed. The composition of political information workers and agitators has been strengthened.

The administration, the party committee and public organizations follow a single calendar plan and there has been a curtailment in the number of meetings and conferences. There has been a significant drop in non-production losses of work time, absenteeism has been curtailed by half, intra-shift idleness has been decreased and the turnover of cadres is being curtailed.

The party organizations of the Ust'-Udinskiy and Novochunskiy timber industry enterprises and the Ust'-Ilimskiy chemical timber enterprise are working very creatively.

We also have examples of a different nature. Let us look, for example, at the Tayshetles Production Association. Here there is a patient attitude toward violations of labor and production discipline. In the association the largest amount of absenteeism among the enterprises of VLPO [All-union timber industry association] occurred in Irkutsklesprom [Irkutsk Timber Industry Association]; it does not fulfill plan quotas.

The party committee and the shop party organization of the association does not exert the required influence on the status of economic activities of enterprises; they are weak in increasing the responsibility of leaders for educational work in labor collectives. Most enlarged timber-felling brigades have not created party groups and party organizers have not been confirmed. Party organizations have not created an atmosphere of great demandingness and lack of tolerance toward shortcomings. The party rayon committee turned the attention of the Tayshetskiy Rayon party committee toward the necessity of taking effective measures to correct these shortcomings, of rendering daily and energetic aid to the association in order to increase the battle-readiness of local party organizations and party groups and of mobilizing the efforts of all communists with the goal of eliminating all difficulties.

Fulfilling a Duty, Moving Forward

The five-year plan foresees an increase of 45 percent in production volume in the enterprises of the timber and timber-processing industries of the oblast. It is planned to triple the production of wood shaving slabs, to double the production of cellulose and to increase furniture production by a factor of 2.5.

What is the status of quota fulfillment for the five-year plan? Unfortunately, there are still collectives that do not fulfill their quotas. In particular, during the first 2 years the national economy was undersupplied with a large quantity of commercial timber, rail ties and cellulose. The oblast committee is directing the efforts of labor collectives, party organizations and economic cadres toward relinquishing the debt that was incurred during the first years of the five-year plan.

The collectives of many associations and enterprises have approached the formulation and implementation of plans for the third year of the five-year plan with a great degree of responsibility. In the Ust'-Ilimskiy LPK [Timber processing complex] Association, for example, production output increased by 45 percent as compared to the same period last year; at the Ziminskiy Rosin Plant--by 22 percent. Labor productivity increased by 10.4 percent as compared to the same period last year in the enterprises of this branch located in the oblast.

The party oblast committee has thoroughly analyzed the activities of branch enterprises, and in particular of the two largest--the All-Union Timber Industry Association, Irkutsklesprom, headed by V. Sakharov, and the Bratskiy Timber Industry Complex Association, which was recently taken over by General Director V. Chuyko, Deputy Minister of the Timber, Pulp and Paper and Wood Processing Industry. During the current five-year plan the Bratskiy Complex alone underproduced bleached and cord pulp, shaving materials and articles for machine building, plywood and other important products valued at 150 million rubles.

The previous directors of the complex bear responsibility for this. Serious complaints had to be directed at the city committee and the central party committee of the city of Bratsk. The status of the Bratsk Timber Industry Complex was examined more than once in plenums and bureau meetings. Nevertheless, we must admit that their decisions were not reinforced with the necessary organizational work. Many measures directed at achieving planned capacities by eliminating problem areas in production, renovation and modernization of equipment as well as at mechanizing manual labor and decreasing its proportion in the total volume of technological operations have not been fulfilled. This happened to a large extent because the city committee did not draw on the local and shop party organization of the complex in its work.

In directing communists and the entire collective of the timber industry complex toward seeking out and better utilizing extensive existing internal reserves for raising the effectiveness of production, the party oblast committee clearly sees its shortcomings. But it is also important to resolve those problems in which the USSR Ministry of the Timber Industry and planning organs must have a say. We do receive serious help from them, but a great deal still has not been done.

For example, the splitting of full-length logs is still planned for the raw-materials base of timber industry enterprises of the Bratskiy LPK on a large scale even though this is often accomplished with extensive expenditures of manual labor; the delivery of logs to consumers and other quality articles is also planned. At the same time large capacities for sawing up wood in a highly mechanized timber facility in the complex is underutilized. As a result enterprises with a sufficiently secure timber raw materials base, where about 8 million cubic meters of wood are procured, cannot supply raw materials to plywood and timber-sawing and processing plants and undersupplies consumers with a large quantity of plywood and quality lumber.

We see the extensive introduction of progressive experience with regard to organizing labor and production in the enterprises of the timber, pulp and paper and wood processing industry as the fundamental goal in the struggle to further increase the effectiveness of the branch.

Progressive Experience for Every Collective

For several years now a progressive form of labor organization has been in effect in timber procurement--an enlarged cost-accounting team brigade. Labor productivity in such brigades is an average of 20 percent higher than in regular brigades. And the best collectives achieve even more. Here is an example.

The large timber-felling brigade of recipient of the USSR State Prize Nikolay Vasil'yevich Polonin from the Ust'-Udinskoye Timber Industry Enterprise of the Irkutskles Production Association has been the leader in socialist competition throughout all of the years of the 11th Five-Year Plan. During this five-year plan it procured 182,000 cubic meters of wood above the quota. Here every work minute is taken into account, a precise work regimen has been elaborated and emergency work as well as a violation of discipline and the rules of industrial safety have been eliminated. All members of the brigade have several specialties and can replace each other if necessary. The effective utilization of new technology has enabled them to decrease the number in the brigade and to almost double labor productivity.

The best timber-transport truck units of the Novochunskiy Timber Industry Enterprise are achieving an output per truck that is higher than the oblast average by a factor of 1.5-2 by maintaining roads in good condition and by increasing truck runs without capital repairs to 200,000 kilometers. Still, progressive production experience is being assimilated poorly; the achievements of leaders are not becoming the achievements of all and the norm for all. Five all-union schools of progressive experience have been created in the enterprises of Irkutsklesprom. People come from all over the country to study the experience of the leaders. At the same time these schools frequently operate only on orders from above and only sporadically.

An instructive example concerning the correct approach to the use of raw timber and other material resources comes from the work experience of the collectives of Ivano-Frankovsk Oblast and the Kotlasskiy and Solikamskiy pulp-paper combines, which has been approved by the CPSU Central Committee. Many directors, specialists and party and trade union workers studied it directly in these enterprises. Oblast associations have worked out specific measures for introducing this experience.

The collective of the Kitoyles Association has introduced practically wasteless technology and almost all wood arriving in its industrial facilities is made use of. Other enterprises are also working in this direction. However, large-scale possibilities for the complete assimilation of wood from the roots to the crown of the tree are still being utilized poorly.

It is important to more fully utilize timber-felling wastes, the quantity of which is very large. But neither scientists nor specialists of enterprises have yet worked out an effective technology for collecting, loading and transporting them. This problem deserves the most intent attention. After all, frequently industrial timber is utilized in the production of industrial chips whereas it would be possible to utilize some types of timber-felling wastes with the same success. Directors of enterprises and economists seem to miss the fact that industrial timber is ready production in itself and costs more than the industrial chips made from it.

The problem of utilizing sawdust is no less acute. At the Bratskiy and Ust'-Ilimskiy LPK's over half a million cubic meters of wood wastes in the form of sawdust and small shavings are dumped and burned. At the same time the building of planned hydrolysis-yeast plants for processing these wastes into feed yeast is being delayed without justification. Decisions concerning this matter have been made by the ministries of power and electrification and timber, pulp and paper and wood processing of the USSR and the focus now is on successfully implementing them.

I would like to also discuss improving conditions and the organization of repairs of timber-procurement and other technology. It seems to us that in places where it is greatly concentrated it would be very effective to make a transition to a company's technical services, in imitation of the experience of the Kamskiy Automobile Plant [KamAZ].

The annual economic effectiveness of introducing the KamAZ experience in the oblast can exceed 2 million rubles. I feel that the proposals related to this will be supported by the corresponding ministries, and in Irkutsk Oblast centers of the Kremenchugskiy Automobile Plant and the Altay Tractor Plant will be opened for the purpose of technically servicing and repairing timber-transport and tractor technology.

The tasks for the current year and until the end of the five-year plan are complex and responsible ones. The oblast party organization is directing the efforts of collectives of enterprises that procure and process wood toward fulfilling plan quotas, eliminating tolerated lags and strengthening the noted tendency toward stable development of enterprises of one of the most representative branches in our oblast.

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NEW TIMBER TECHNOLOGY UTILIZES WASTE PRODUCTS

Moscow IZVESTIYA in Russian 27 Feb 83 p 1

[Article by A. Sabirov, Izhevsk: "Help for Woodcutters"--For related information see JPRS report UAG-84-003, 31 Jan 84, p 70]

[Text] "When timber is cut the shavings fly," is what the people say. Millions of cubic meters of these shavings accumulate. Most of them still remain in the felling area. Losses can be curtailed with self-propelled felling machines manufactured in the capital of the Udmurt ASSR. They use shavings and knots of wood to make valuable products--industrial chips and raw materials for the production of vitaminous meal.

Recently the modernized DO-32 unit underwent testing. Its capacity has been increased by a factor of 1.5 and it separates the crushed mass better into different sizes.

It is important that the mobile plant be supplied uninterruptedly with inconvertible wood and felling wastes. A loading-transport machine has been developed for this purpose. It is equipped with a roomy body. A timber container conveyance will transport the products.

Samples of still another essential woodcutting machine have also been manufactured. This refers to the MK-10 sawmill, which is capable of finely grinding tree bark. The "meal" that is produced is widely used, particularly as fertilizer.

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NEW TIMBER TECHNOLOGY FOR UTILIZING WASTES

Moscow PRAVDA in Russian 11 Mar 83 p 1

[Article by V. Kiryasov, Petrozavodsk: "From the Roots to the Top of a Tree"]

[Text] Trees are being cut down and shavings are flying. This usually means that something is irretrievably lost. But here in Petrozavodsk a decision was made to disprove this idea. Industrial chips, which timber procurers and workers of the timber processing enterprises obtain from timber felling wastes, non-standard wood and sawing wastes, have become one of the most valuable forms of raw materials for the production of paper and in wood chemistry.

New technology is helping us to use all the wood in a tree from the roots to the top. The collective of the local repair-mechanical plant of the all-union Karellesprom [Karelian Timber Industry] association has assimilated the manufacture of mobile equipment for the production of industrial chips directly in timber felling areas.The T-157 tractor is being equipped with a hydraulic manipulator coupled with a felling unit. The compact and highly-efficient complex transforms all non-standard wood and felling wastes into valuable raw materials. The first such machines are operating in the Pyaozerskoye Timber Industry Enterprise in the north of the autonomous republic.

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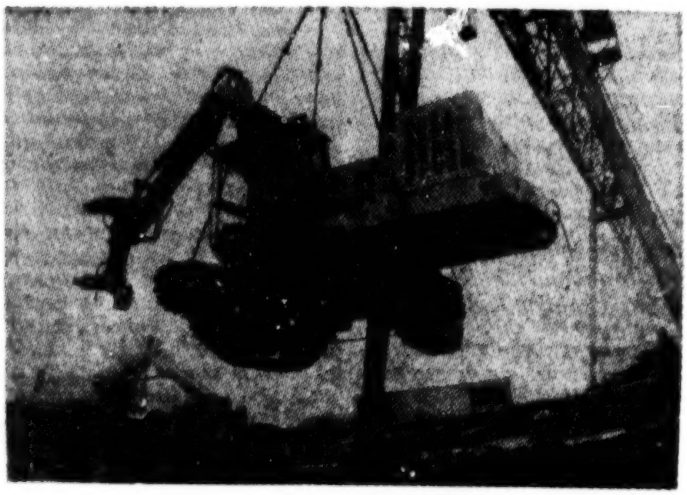
FORESTRY AND TIMBER

PHOTO OF TIMBER COMBINE USED IN THE USSR

Moscow SEL'SKAYA ZHIZN' in Russian 9 Dec 82 p 1

[Caption under photo by Ye. Logvinova]

[Text] Machines with the markings of the Yoshkar-Olinskiy Plant of Timber Machine Building are very familiar to the timber procurers of the Urals, Siberia, the Far East, the central oblasts of Russia and other regions in the country.



In the photo: the unloading of timber combines.

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BRIEFS

FOREST TRACTOR--Khar'kov--The TL-28 timber industry tractor, developed by designers at the Khar'kov Plant of Self-Propelled Tractor Undercarriages, has successfully passed state tests in the forests of the Moscow region and the Baltic States. Significantly smaller in overall dimensions than caterpillar logging tractors, the new machine has a number of advantages over them. It easily overcomes wind slashes, obstructions and shallow water obstacles and maneuvers well in thickets. Designers were able to achieve this by changing the frame to hinges and by altering the arrangement of the assembly. Both pairs of wheels have become drive wheels. Equipped with various shift attachments, the tractor can proceed with the mechanized felling of timber, with transporting felled trees and timber and with planting young trees. [Text] [By V. Pavlenko] [Moscow IZVESTIYA in Russian 17 Feb 83 p 1] 8228

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26 March 1984